ECO317: Concepts of Fairness in Economics

University of Toronto, Winter 2024

https://q.utoronto.ca/courses/330538

Syllabus version: January 10, 2024

Lectures: Thu 10 AM – 12 PM, OI 2212
Instructor: Gabriel Carroll, gabriel.carroll@utoronto.ca
Office hours: Mon 4 – 6 PM, GE 306

Tutorials: Fri 1 – 2 PM, OI 2212
TA: Alim Faraji, alim.faraji@mail.utoronto.ca
Office hours: Fri 12 – 1 PM, GE 213

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; past students have reported that attending lectures is valuable.

Tutorials will be a combination of more in-depth discussions, background material, study of related concepts, and review of homework problems. The content of the tutorials will vary from week to week and will adjust to the needs of the class. You are encouraged to attend to strengthen your understanding.

Reading: The main written resource for this class is the lecture notes. A current version of these notes will be posted on the Quercus site at the beginning of the semester. The notes are continually undergoing revision, and it is likely that an updated version will be posted later in the semester. The lecture notes 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.

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, I have tried to roughly follow 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.

Several of the topics treated in the class are not covered in any of the three books, and for these, we will have articles linked from the Quercus site.

Policies and procedures

Health and safety: Although campus life has been solidly in-person for nearly two 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.

It is possible (though not expected) that the public health situation will worsen again, such that classes will be held online and/or recorded for those who cannot be present in person. If this happens, the University's provisions for video recordings apply:

> Any course recordings and materials are property of the University of Toronto and may not be copied or shared without the explicit permission of the instructor. Do not make your own recordings of the class. For questions about recording and use of videos that contain your image or voice, please contact the instructor.

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 three kinds of assignments:

- **Problem sets: 28%.** There will be 8 of these, assigned weekly, with the first one distributed on Jan 25. 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.

- **Term paper: 32%.** You will pick a problem in distributive justice that is not already covered in this course, propose a solution to it, and defend your solution. A short, informal proposal (worth 2% out of the 32%) will be due on Mar 7, and the paper itself will be due on Apr 8. More detailed instructions will be given later.

- **Final exam: 40%.** The exam will be open-book. Content will be similar to the problem set questions. Last semester's exam will be made available for practice.

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

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.)

For the term paper, late submissions will be accepted, but they will be penalized by 25 percentage points for each day or part-day of lateness. (Thus, if your submission is more than three days late, it will receive a score of zero.)

If you foresee a reason why a deadline extension will help you write a significantly better paper, you can request such an extension. The request should be made at least a week before the original deadline, and there should be no presumption that your request will be granted.

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. (Duh, right?)

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.

This course uses the University's plagiarism detection tool, Ouriginal, for term papers. The standard disclaimer for this tool applies:

> Normally, students will be required to submit their course essays to the University's plagiarism detection tool for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the tool's reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of this tool are described on the Centre for Teaching Support & Innovation web site (`https://uoft.me/pdt-faq`).

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; 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. Your feedback—such as suggestions for new topics, or mistakes you find in the lecture notes or textbooks—will be very valuable for future semesters.

If you have an issue that is specific to you and does not warrant public discussion, you can raise it by email. For time-sensitive concerns, I will typically respond within one business day. Please use your UofT email address. 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 probably be minor 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 11: 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 18: 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 25: Cost-sharing problems (continued)

- Feb 1: Fair division

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

- Feb 8: Fair division (continued)

- Feb 15: 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 22: Reading week; no classes]

- Feb 29: 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 7: 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 14: Cardinal welfare (continued): inequality

- Mar 21: 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 28: Intergenerational equity
  - ∗ Lecture notes: (not yet written; to be distributed later)
  - (Rec) Hilary Greaves, "Discounting for Public Policy: A Survey," *Economics and Philosophy* 33, 2017: 391–439 (can skip sections 8–9 and 11–12; key ideas are in sections 6, 7, 10)
  - (Opt) Martin Weitzman, "Why the Far-Distant Future Should Be Discounted at Its Lowest Possible Rate," *Journal of Environmental Economics and Management* 36, 1998: 201–208
- Apr 4: 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.