

Economics 471 - Unemployment, Search and Matching  
Professors Albrecht and Vroman  
Spring 2021

Lectures: Tuesdays and Thursdays, 3:30-4:45PM

Office Hours: TBA

emails: [susan.vroman@georgetown.edu](mailto:susan.vroman@georgetown.edu) and [albrecht@georgetown.edu](mailto:albrecht@georgetown.edu)

Teaching Assistant: Rachel Feldman [ref71@georgetown.edu](mailto:ref71@georgetown.edu)

Office Hours: TBA

**Overview:** Search and matching frictions are important in many markets. For example, in the labor market, workers search for suitable jobs while at the same time firms try to find suitable workers. Some workers cannot find a job while at the same time some vacancies remain unfilled. Excess supply (unemployed workers) and excess demand (unfilled vacancies) co-exist. In this course, we will analyze markets with search and matching frictions. We will emphasize the labor market (what determines the rate of unemployment?, how can we understand wage differences across similarly qualified workers?), but, as time permits, we will also look at other markets with search and matching frictions – the housing market, the marriage market, the market for nonstandard financial assets, etc.

You can get an idea about the range of topics and the style of analysis by looking at

“Search Theory: The 2010 Nobel Memorial Prize in Economic Science” by Professor Albrecht in the *Scandinavian Journal of Economics*, June 2011, pp. 237-59.

“Markets with Search Frictions” – Scientific Background on the 2010 Nobel Prize in Economics, by the Economic Sciences Prize Committee of the Royal Swedish Academy of Sciences. This is available online at the Nobel Prize website at [http://www.nobelprize.org/nobel\\_prizes/economics/laureates/2010/advanced.html](http://www.nobelprize.org/nobel_prizes/economics/laureates/2010/advanced.html) Click on “Scientific Background” which is just below Advanced Information.

“Search-Theoretic Models of the Labor Market: A Survey” by Rogerson, Shimer and Wright in the *Journal of Economic Literature*, December 2005, pp. 959-988.

“Directed Search and Competitive Search: A Guided Tour” by Wright, Kircher, Julien and Guerrieri, *Journal of Economic Literature*, forthcoming. The paper is available at <https://philippkircher.com/wp-content/uploads/Directed-Search-Survey-WKJG.pdf>

As you can infer from the first two papers, the Nobel Prize in Economics was awarded for work in search theory in 2010; specifically, the prize was awarded to Peter Diamond, Dale Mortensen and Chris Pissarides. The “Diamond-Mortensen-Pissarides (DMP) model” is now the “textbook model” for understanding unemployment.

As is standard in economics, there is some mathematics in these papers. If you find this completely appalling, this is not the course for you. On the other hand, if you can understand some (but not necessarily a majority) of the formalism, then you should do just fine. Intermediate Micro (Econ 101) is a *prerequisite* for the course as is Economic Statistics (Econ 121).

**Organization and Requirements:** We will lecture for approximately the first 11 weeks of the semester. Notes and slides will be posted on Canvas, but, unless you are in a distant time zone, you are expected to attend class, and – at the margin – your grade will depend on how much you contribute to the discussion. We plan to assign 4 problem sets. There will be an exam in mid-April. Finally, students are required to write an 8 - 10 page paper on a topic of their choice related to the course material. For example, you might investigate the literature about why the Spanish unemployment rate is so high and what the arguments are for and against various policies that have been proposed to lower unemployment there. Or, you might summarize a paper or papers that treat a topic related to the lectures. Topics for the paper are due mid-February (Feb. 11) and a preliminary outline is due at the end of March (March 25). During the last two weeks of classes, each student will be given 15 - 20 minutes to present their paper. The presentation slides are due the day before the presentation. The paper is due on the first day of the final exam period. Students are urged to meet with us within the first three weeks of the semester to discuss potential paper topics. The paper should, of course, be properly footnoted and should include a complete list of references.

**Grading:** The course grade is based on the problem sets (30%), the exam (35%), the research paper and presentation (30%), and class participation (5%).

**Honor Code:** All students are expected to abide by the Georgetown Honor Code. Any student found in violation of the Honor Code will receive an F for the course in addition to any penalties imposed by the Honor Council. The Honor Council web page can be found at <https://honorcouncil.georgetown.edu>

**Recordings of Lectures:** We will provide links to recordings of the lectures since some students are in other time zones. Please note that the recordings are protected by copyright law. They are being provided to you in connection with this course and as an accommodation during the current pandemic. They may be used only by you for purposes of this class, and you may not copy, download or otherwise redistribute them for any other purpose.

## Course Outline

**Introduction** – 2 lectures presenting an overview of the course and an introduction to labor market data.

**Optimal Sequential Search** – 3-4 lectures presenting the baseline model of optimal sequential search by an unemployed worker. These lectures will introduce you to the tools we will use in subsequent sections of the course. Section 2 (with some extensions in Section 3) of the RSW survey covers this material.

**Macro Labor** – 5-6 lectures presenting the Diamond-Mortensen-Pissarides model. This is the workhorse model of unemployment used by macroeconomists. It is used to understand differences between countries in their “natural rates” of unemployment as well as how unemployment varies over the business cycle. Section III of Albrecht, Section 3 of the Nobel survey and Section 4 of RSW cover this material.

**Random Search** – 5-6 lectures presenting models based on random search that are designed to explain unemployment and equilibrium wage dispersion, i.e., the variation in wages paid to equally productive workers. Section II of Albrecht and Section 5 of RSW presents this material.

**Directed Search** – 4-5 lectures presenting models of directed (or competitive) search. These are models in which agents on one side of the market post and commit to terms of trade, e.g., a firm with a vacancy posts and commits to a wage, while agents on the other side of the market “direct their search,” e.g, a job seeker decides which job(s) to apply for based on the posted terms of trade. This material is presented in Section 2 of the WKJG survey and in Section 5 of RSW.