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# HODE 3225: INTRODUCTION TO PUBLIC FINANCE OF EDUCATION

Spring 2024  
Tuesday and Thursday  
11 a.m.–12:15 p.m.  
6 Magnolia Circle 102

Syllabus revised: 2024-01-09

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**Instructor:** Christopher A. Candelaria, Ph.D.  
**Office:** Payne Hall, 106D  
**Email:** [chris.candelaria@vanderbilt.edu](mailto:chris.candelaria@vanderbilt.edu)  
Please include “HODE 3225” (no quotes) in the subject line.  
**Office hours:** Tuesdays, 3:00–4:00 p.m. (in-person or Zoom appointments)  
Thursdays, 4:30–5:30 p.m. (Zoom only)  
Book office hour appointments at the following site:  
<http://candelaria.youcanbook.me> (Password: vanderbilt)  
**Office phone:** (615) 322-0722 (Please leave a voicemail message.)

**Teaching Assistant:** Kenton Shimosaki ([kenton.shimosaki@vanderbilt.edu](mailto:kenton.shimosaki@vanderbilt.edu))

## Course Description

In this course, we first provide a foundation of knowledge for the economics of education. Then we will focus on the following six guiding questions:

1. Should public funds be used to subsidize investments in education?
2. To what extent do school leaders optimally allocate public funds?
3. How do public schools receive their funding?
4. Does money matter for educational outcomes?
5. What are the economic arguments for school choice?
6. What is the impact of teacher pay policies on teacher labor markets?

## Learning Objectives

1. Engage in discussions about current events related to the public financing of education
2. Understand economists’ perspectives on education policy and public finance
3. Connect economic models, theories, and ideas with frameworks from other disciplines
4. Be a critical consumer of education research

## Skills and Knowledge

1. Understand how education markets differ from competitive markets
2. Explain and compute present discounted value when examining investment decisions in education
3. Use budget constraints to model resource allocation decisions
4. Illustrate and explain cost minimization using isoquants and budget constraints
5. Illustrate and explain utility maximization using indifference curves and budget constraints
6. Explain how local, state, and federal funding impact education finance
7. Illustrate and explain parental decision making in the presence of school choice
8. Describe the impact of a salary schedule on the teacher labor market

## Course Structure

Lectures, class discussions, problem sets, a class presentation, and a policy brief will be used to develop an understanding of economic concepts and techniques and the application of these tools to real-world issues. The policy brief will be due at the end of the semester and will serve as a means of integrating the course content as it applies to a policy area of interest.

This is an upper-level, intermediate undergraduate course. I expect that the students in the course are motivated by a desire to learn the course material. Please come to class having carefully read any relevant textbook chapters or supplementary readings. Attendance in class is extremely important. If you need to miss a class, please notify our TA by email.

## Course Materials

### Textbooks and Readings

There are three required textbooks for the course, two of which are freely available:

1. Lovenheim, M. & Turner, S. (2018). *Economics of Education*. Worth Publishers, 1st edition.
2. Principles of Microeconomics 3e from OpenStax, ISBN-13: 978-1-951693-65-7,  
<https://openstax.org/details/books/principles-microeconomics-3e>

*This text is freely available through the URL above.*

3. Hanushek, E. A. & Lindseth, A. A. (2009). *Schoolhouses, Courthouses, and Statehouses: Solving the Funding-Achievement Puzzle in America's Public Schools*. Princeton University Press

*This book is online and freely available through the Vanderbilt library.*

Additional notes and readings listed on the syllabus (required and optional/suggested) will be available via the Brightspace course website. Please note that some of our readings are from journal articles appearing in the economics of education literature, which might seem daunting if you

have not been exposed to this literature. You are not expected to understand all the technical details; you will receive strategies for reading these articles.

## **Lecture Notes and Slides**

I will post a rough draft of the lecture slides at least one hour before class, so that you can follow along during the lecture. During the class, I will add additional notes and graphs to the slides. These annotated lecture slides will be posted after class.

## **Participation, Assignments, and Grading**

### **Participation (15%)**

Unlike products you buy from a brick-and-mortar store or an online store like Amazon, the product of this class—learning—is not something that you can simply purchase—yes, I realize that tuition is expensive, but you also have an important role in generating human capital. From an economics perspective, learning is a customer input technology—your effort matters! I will do my best to teach the material, but I expect students to actively engage with the class material as well.

Participation is worth 15 percent of your final grade. We will have a total of 28 classes and 10 participation points can be earned for each class session. Participation points for class sessions 1 and 2 will be earned after visiting Professor Candelaria at least once during office hours *before* spring break. The meeting will only take 10 minutes. The goal of this meeting is for Professor Candelaria to get to learn more about you and your interests.

For the remainder of the semester (classes 3 through 28), 10 points will be awarded through a combination of pop quizzes based on readings; active participation in class activities, exercises, or discussions; and/or randomized calling. On Brightspace, you will notice that every class has an entry for participation.

At the end of the semester, students have the option of recovering up to 9 out of 10 points for up to two classes that they did not attend. To earn these points, students will complete a short writing project on a topic we covered during the semester. The optional assignment will be due on April 28 at 11:59 p.m. The quality of the assignment submitted will determine how many points will be awarded.

### **Problem Sets (40%)**

There will be six problem sets throughout the course of the semester; however, your lowest problem set score will be dropped. Therefore, each of your five highest-scoring problem sets will be weighted at 8 percent of your grade, with all problem sets totaling 40 percent of your final grade. Partial credit is given for logical and serious attempts to problem set questions.

You may collaborate with our students on these assignments, but I expect each student to turn in their own copy of the problem set. In your submission, you must list the names of the students with whom you collaborated. You may not use AI tools to complete any of the problem sets.

The TA and I will use Gradescope to receive and return all problem sets, which is accessible through

Brightspace. We will provide a tutorial on how to submit assignments for your reference. After uploading your assignment, you must select where your responses appear for each problem set question or sub-question in order to receive credit.

You must submit an electronic copy of your solutions by **11 a.m. on the due dates listed below** via Gradescope on Brightspace. Late problem sets will be subject to a 20 percent grade reduction for each day they are late. Please do not wait until the last minute to submit.

**Due dates:**

1. January 25 (Thursday)
2. February 8 (Thursday)
3. February 22 (Thursday)
4. March 7 (Thursday)
5. March 28 (Thursday)
6. April 18 (Thursday)

**Class Presentation (10%) and Policy Brief (35%)**

Your final project for this course will be a written policy brief—no more than 1,250 words—with an in-class presentation on a topic in the public finance of education. If you are looking for ideas, one suggestion is to look at the chapters of the latest edition of the *Handbook of the Economics of Education* (Volume 7). We will post the chapters on Brightspace.

For this final project, you can work in pairs or alone. The in-class presentation will be an opportunity to present a structured working draft of your policy memo at the end of the semester. This presentation also serves as an opportunity to receive feedback from your peers and the instructor to incorporate into your final written submission. **A short policy topic proposal will be due on Thursday, February 15.**

**The policy brief will be due by 9:00 a.m. on Monday, April 29.** Detailed instructions and grading criteria for the policy project will be available on Brightspace.

**Grading**

The course grade assigned by the instructor will be calculated taking into account all graded items. You cannot pass this class unless you complete all the graded assignments—problem sets are the only exception, where you need to complete 5 out of 6 problem sets. Grade percentages will be assigned as follows:

Participation .....	15%
Problem sets (5 highest scores) .....	40%
Class presentation .....	10%
Policy brief .....	35%
	<b>Total: 100%</b>

If you are concerned about your progress at any point during the course, please feel free to come and talk with me during office hours. However, please note that any statement, comparison, or any other sort of assessment made by the instructor before the availability of final exam scores is based on incomplete information; therefore, such an assessment must be interpreted only as a guess, and does not obligate the instructor in any way.

The following grading scale will be used in this course:

Grade	Percent	Grade	Percent
A	93 – 100	C	73 – 76.9
A-	90 – 92.9	C-	70 – 72.9
B+	87 – 89.9	D+	67 – 69.9
B	83 – 86.9	D	63 – 66.9
B-	80 – 82.9	D-	60 – 62.9
C+	77 – 79.9	F	0 – 59.9

When assigning final grades, I may adjust the grading scale *downward* to account for the difficulty of exams and assignments. For example, the “B”-range might be adjusted such that a grade of “B” spans 80 to 86.9 percent. **I reserve the right to make any downward adjustments but not upward adjustments.** In other words, such adjustments can only help you.

## Office Hours

Please take advantage of office hours to ask questions about any of the topics we cover, to discuss your interests, or to seek *guidance* on a problem set. Please do not, however, come to office hours expecting answers to the problem set.

If none of the available times work for you, please send me an email to arrange a time. Please do not forget to include “HODE 3225” (no quotes) in the subject line to ensure I receive your email.

## HODE 3225 Course Policies

### Honor Code

All work submitted in this course (i.e., problem sets, papers, and other written assignments) is governed by provisions of the Vanderbilt University Honor Code, found in the student handbook.

It is permissible and, in fact, encouraged that you discuss the material covered in class and in the readings with one another. It is also permissible to discuss problem sets and written assignments before turning them in for grading. However, any work that you turn in is expected to be your own. It is not permissible to copy from another person’s paper, nor to turn in as your own a problem set or paper that has been largely written by someone else. As a fair warning, the instructor can use “TurnItIn” to screen problem sets and papers before assignments are graded. This is a program that will identify stretches of text that match, verbatim, known sources, and papers previously submitted for credit in this class.

If you have any doubts about how the Honor Code applies to your work in this class, do not hesitate to ask the instructor—not another student—for clarification. Uncertainty about the application of the Honor Code does not excuse a violation.

## **Policy on Releasing Grades**

To comply with Family Educational Rights and Privacy Act of 1974, the instructor cannot release or discuss grades via email; such emails will be ignored. All grades will be released via Brightspace and should be considered final. If you believe an error was made when grading your assignment or exam, please see the re-grading policy below.

## **Policy on Re-grading Assignments**

- Please fill out the regrade request form on Brightspace within one week of receiving your graded assignment. Please note that an assignment or assessment will never be regraded after one week has passed.
- By submitting a request, you agree to allow the instructor to regrade the entire assignment or exam. Thus, it is possible to lose points if the instructor discovers other marking mistakes.

**All students in this course must understand and agree to all of the terms above concerning the determination of course grades.**

## **Artificial Intelligence**

When completing problem sets, you may not use generative AI tools, such as ChatGPT, and you may not receive unauthorized aid from AI software. Using these tools on problem sets is a direct violation of the honor code. However, for the policy brief, we will discuss proper uses of AI tools to help you outline and structure your writing.

## **Class Recordings**

Starting with the second class, the TA and I will record each lecture and post it on the Brightspace page as a resource for you to review.

Because Vanderbilt University seeks to protect the intellectual property of all faculty and safeguard the privacy of everyone in class, students may not record, reproduce, screenshot, photograph, or distribute any recorded content from this course, except for their own personal educational use. Failure to abide by this policy may be an Honor Code violation or may result in corrective action through the University's accountability process, depending on the circumstances.

## **Electronic Devices**

If you find using a laptop or tablet for note-taking useful, I encourage it. Not encouraged, however, is the use of electronic devices for email, web-surfing, social media, or whatever the cool new thing is that I do not know about. Please use your laptop or tablet politely in class, so as not to distract others and so that you can focus on the course. And please, silence your phones during class. Failure to adhere to these guidelines will result in a loss of participation points.

## **Randomization during Class Sessions**

Beginning with the second class, students will be randomized to different seats. The purpose of randomization is to give students an opportunity to work with different students in each class

session. In addition, students will be randomly called upon during class lectures and discussions to ensure that everyone has the opportunity to participate.

## **Peabody College Policies**

### **Classroom Accommodations**

Vanderbilt is committed to equal opportunity for students with disabilities. If you need course accommodations due to a disability, please contact VU Student Access Services to initiate the process. After SAS has notified me of relevant accommodations, we will discuss how these accommodations may best be approached in this class, and I will facilitate the accommodations.

### **Mental Health and Wellness**

If you are experiencing undue stress that may be interfering with your ability to perform academically, Vanderbilt's Student Care Network offers a range of support services. The Office of Student Care Coordination (OSCC) is the central and first point of contact to help you navigate and connect to appropriate resources. You can schedule an appointment with the OSCC at <https://www.vanderbilt.edu/carecoordination/> or call 615-343-WELL. You can find a calendar of services at <https://www.vanderbilt.edu/studentcarenetwork/satellite-services/>.

If you or someone you know needs to speak with a professional counselor immediately, the University Counseling Center offers Urgent Care Counseling. Students should call the UCC at (615) 322-2571 during office hours to speak with an urgent care clinician. You can also reach an on-call counselor after hours or on weekends by calling (615) 322-2571 and pressing option 2 at any time. You can find additional information at <https://www.vanderbilt.edu/ucc/>.

### **Names and Pronouns**

If you would like to use a different name or pronouns than those provided through YES, please let the instructor know at any time prior to or during the semester. Information is available through the LGBTQI Life offices about how to change either or both of these in YES.

### **Health and Safety**

Our mutual commitment to health and safety is vital. Toward that end, all students are expected to adhere to Vanderbilt health and safety protocols. Guidance may be updated throughout the semester.

### **Mandatory Reporter Obligations**

All University faculty and administrators are mandatory reporters. What this means is that all faculty and administrators must report allegations of sexual misconduct and intimate partner violence to the Title IX Coordinator. In addition, all faculty and administrators are obligated to report any allegations of discrimination. I am willing to discuss with you such incidents but can only do so in the context of us both understanding my reporting obligations. If you want to talk with someone in confidence, officials in the Student Health Center, the University Counseling Center,

and the Office of the Chaplain and Religious Life (when acting as clergy) can maintain confidentiality. In addition, officials in the Project Safe Center have limited confidentiality, in that they must report the incidents but can do so without providing identifying information. The Project Safe Center serves as the central resource for those impacted by sexual misconduct and intimate partner violence and can assist with navigating all facets of the University's resource and support network and other processes.

## Disclaimer

The statements contained in this syllabus, other than the grading policies, may be subject to change with reasonable advance notice.

## Course Schedule

For course readings, Lovenheim and Turner's text is denoted as **LT**, OpenStax, Principles of Microeconomics is denoted as **OPM**, and Hanushek and Lindseth's text is denoted as **HL**. If required readings are changed, you will be notified in advance.

### Preliminaries

Tue 01/09, Class 1: Introduction to course and course objectives

Thu 01/11, Class 2: Making Connections: Economics and Education

Required readings:

- **LT** Chapter 1: Why do Economists Study Education Policy?
- **OPM** Chapter 1 and Chapter 2
- **OPM** Chapter 3 (Read 3.1 to 3.3 for deeper understanding of supply and demand; skim sections 3.4 and 3.5)

Tue 01/16, Class 3: Education Markets vs. Competitive Markets

Required readings:

- **LT** Chapter 2: The Structure and History of Education Markets in the US
- **OPM** Chapter 8, Section 1: Perfect Competition and Why It Matters
- Levin, H. M. & Belfield, C. L. (2003). The Marketplace in Education. *Review of Research in Education*, 27(1), 167–219. (NOTE: Please only read pages 167 to 195.)

Suggested readings:

- Winston, Gordon. (1997). Why Can't a COLLEGE Be More Like a FIRM



## Thu 01/18, Class 4: Basic Empirical Tools in Education Economics

## Required readings:

- **LT** Chapter 3: Empirical Tools of Education Economics
  - Note: Chapter 3 is very technical in nature. Please carefully read sections 3.1–3.2. For section 3.3 on non-experimental methods, please only read the regression analysis section (i.e., stop when you the section called “Policy Changes and the Difference-in-Difference Approach”). Throughout the chapter, there are several equations—you do not need to memorize them; instead, be able to explain why each of the equations and **bolded** terms (e.g., correlation, omitted variable) is important for research and policy analysis.
- Bettinger, E. P., Terry Long, B., Oreopoulos, P., & Sanbonmatsu, L. (2012). The role of application assistance and information in college decisions: Results from the H&R Block FAFSA experiment. *The Quarterly Journal of Economics*, 127(3), 1205–1242.

## Suggested readings:

- Deming, D. & Dynarski, S. (2008). College Aid. (URL: <http://www.nber.org/chapters/c11730>)
- Econometrics vs. Statistics Blog Post by Matthew E. Kahn (URL: <http://greeneconomics.blogspot.com/2017/08/econometrics-vs-statistics.html>)

**Question 1: Should public funds be used to subsidize investments in education?**

## Tue 01/23, Class 5: Introduction to the Human Capital Model

## Required readings:

- **LT** Chapter 4: The Human Capital Model
- Ehrenberg and Smith’s *Modern Labor Economics* (9th Edition): Chapter 9 (pp. 297–311): “Is Education a Good Investment”
- **OPM** Chapter 13

## Thu 01/25, Class 6: Human Capital Model (continued)

**Problem Set 1 Due!**

## Required readings:

- Same as previous class.

## Tue 01/30, Class 7: Introduction to the Signaling Model

## Required readings:

- **LT** Chapter 5: The Signaling Model — An Alternative to the Human Capital Framework

- **OPM** Chapter 13

Suggested readings:

- Clark D. & Martorell, P. (2014). The Signaling Value of a High School Diploma. *Journal of Political Economy*, 122(2), 282–318.

Thu 02/01, Class 8: Signaling Model (continued)

Required and suggested readings:

- Same as previous class.

Tue 02/06, Class 9: Evidence of the Returns to Education Investment

Required readings:

- **LT** Chapter 6: The Returns to Education Investment
- Kane, T. & Rouse C. E. (1995). Labor-Market Returns to Two- and Four-Year College, *The American Economic Review*, 85(3), 600–614.

Suggested readings:

- Dee, T. S. (2004). Are there civic returns to education?, *Journal of Public Economics*, 88(9–10), 1697–1720.

### **Question 2: To what extent do school leaders optimally allocate public funds?**

Thu 02/08, Class 10: The Education Production Function

#### **Problem Set 2 Due!**

Required readings:

- **LT** Chapter 7: How Knowledge Is Produced: The Education Production Function

Tue 02/13, Class 11: The Education Production Function (continued)

Required readings:

- **LT** Same as previous class.

### **Question 3: How do public schools receive their funding?**

Thu 02/15, Class 12: Trends in public school funding and local school choice

#### **Policy Brief Topics Due.**

Required readings:

- **LT** Chapter 8: The Financing of Local Public Schools

- From *Handbook of Research in Education Finance and Policy* (2nd edition):
  - Chapter 21. Tax and Expenditure Limits, School Finance, and School Quality. Thomas A. Downes and David N. Figlio.
  - Chapter 23: Equity, Adequacy, and the Evolving State Role in Education Finance. Sean P. Corcoran and William N. Evans.
- **OPM** Chapter 6 (Section 6.1 and 6.2)

Tue 02/20, Class 13: School Finance Reforms

Required readings:

- **LT** Chapter 8: The Financing of Local Public Schools
- **HL** Chapter 3: The Political Responses
- **HL** Chapter 4: Court Interventions in School Finance
- **HL** Chapter 5: Practical Issues with Educational Adequacy

Suggested readings:

- Hoxby, C. M. (2001). All School Finance Equalizations are Not Created Equal. *The Quarterly Journal of Economics*, 116(4), 1189–1231.

Thu 02/22, Class 14: School Finance Reforms (Continued) and Policy Brief Project Discussion

**Problem Set 3 Due!**

Required readings:

- **LT** Same as previous class.

Tue 02/27, Class 15: Fiscal Federalism

- Median Voter Theorem
- Categorical Aid and Equalization Aid
- Budget Constraints and Indifference Curves

Required readings:

- Median Voter Theorem reading from Rosen & Gayer.
- **LT** Chapter 8: The Financing of Local Public Schools
- **OPM** Appendix B: Indifference Curves: What Is an Indifference Curve?
- **OPM** Appendix B: Indifference Curves: Utility-Maximizing with Indifference Curves

Thu 02/29, Class 16: Fiscal Federalism (continued)

Class topics:

- Continuation of previous topics
- Examination of actual state aid formulas

Required readings:

- **LT** Chapter 8: The Financing of Local Public Schools

**Question 4: Does Money Matter for Educational Outcomes?**

Tue 03/05, Class 17: Coleman Report, Hanushek Critique, Empirical Evidence of Whether Money Matters

- Class size reduction policies
- Teacher quality

Required readings:

- **LT** Chapter 9: Does Money Matter? The Relationship Between Education Inputs and Educational Outcomes

**Question 5: What are the economic arguments for school choice?**

Thu 03/07, Class 18: School Choice (Part 1): Economic Theory

**Problem Set 4 Due!**

- Public Education and the Household Budget Constraint
- Utility Maximization and Optimal Consumption Decisions

Required readings:

- **LT** Chapter 10.1

Tue 03/12, No Class: Spring Break

Thu 03/14, No Class: Spring Break

Tue 03/19, Class 19: School Choice (Part 2): Economic Theory and Introduction to Vouchers

Required readings:

- **LT** Chapter 10.1

Thu 03/21, Class 20: School Choice (Part 3): Voucher Applications and School Choice Policies

Required readings:

- **LT** Chapter 10.1, 10.2, 10.3

Tue 03/26, Class 21: School Choice (Part 4): Empirical Evidence of School Choice Policies

Required readings:

- **LT** Chapter 10.3, 10.4, 10.5
- Figlio, D. & Hart, C. M. D. (2014). Competitive Effects of Means-Tested School Vouchers. *American Economic Journal: Applied Economics*, 6(1), 133–156.

**Question 6: What is the impact of teacher pay policies on the teacher labor market?**

Thu 03/28, Class 22: Teacher Labor Markets

**Problem Set 5 Due!**

Required readings:

- **LT** Chapter 12.1, 12.2, 12.3

Tue 04/02, Class 23: Teacher Labor Markets (continued)

Required readings:

- **LT** Same as previous class.

Thu 04/04, Class 24: Teacher Labor Markets/Begin Policy Memo Presentations (if needed)

Required readings:

- **LT** Same as previous class.

Tue 04/09, Class 25: Policy Memo Presentations

Thu 04/11, Class 26: Policy Memo Presentations

Tue 04/16, Class 27: Policy Memo Presentations

Thu 04/18, Class 28: Policy Memo Presentations

**Problem Set 6 Due!**

Monday, April 29 @ 9:00 AM – **Policy Brief Deadline**