# Intermediate Microeconomics

## Patrick Henry College

ECO 333 | Fall 2025 | FH 2 | T-TH 4:00-5:30 pm

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*CALLICLES. How you keep on, Socrates, harping on the same old string about food and drink and doctors and sandals and such-like trivialities!*
*——Plato 380 B.C.*

As found in the college catalog: *This course builds on many of the concepts and theories learned in ECO303, introducing formal analytical tools such as linear algebra and differential calculus to provide an advanced understanding of microeconomic theory. Following this class, students will be prepared to model and understand the economic decisions faced by individuals, firms, and government, and to analyze how changes in the economic environment impact these choices. Topics covered include consumer and producer theory, general equilibrium, industrial organization, and game theory. Prerequisite(s): ECO303.*

This course is an introduction to the formal microeconomic tools of price theory and game theory. With these tools, we will cover markets, taxation, welfare, consumption, production, competition, monopoly, oligopoly, information, risk, uncertainty, and more. This course is designed such that the formal tools are taken seriously but in service to learning the economic way of thinking. To this end, there will be a consistent focus on puzzles and applications, both in lectures and in assignments. Puzzles can range from mundane to serious: How much should a renter care about a property tax? Why is coffee so much more expensive at the coffee shop than at home? Which imports, if any, should be subject to tariffs? What price should policy makers place on a human life?

## BASICS

*Learning Goals*   By the end of this course you will be able to: 1) understand the basic tools of price theory and game theory, 2) apply these tools to novel topics, 3) find your own practical uses for the economic way of thinking, 4) understand, analyze, and critique microeconomic research.

*Prerequisites*   ECO 303—knowledge of basic terms of economics will be assumed. Familiarity with basic geometry and calculus will be helpful, though can be acquired as we go by the driven student.

*Required Texts*   1.) Jack Hirshleifer, Amihai Glazer, and David Hirshleifer, *Price Theory and Applications: Decisions, Markets, and Information*, 7th edition. Cambridge University Press. Abbreviated below as **HGH**.

2.) Armen Alchian and William Allen. *Universal Economics*, Jerry Jordan, editor. Liberty Fund. Available online. Abbreviated below as **A&A**.

3.) Selected readings, available on Canvas: https://phc.instructure.com/courses/3476.

*Optional Texts*   You may find it useful to consult and compare the following texts.

1.) D. McCloskey. *The Applied Theory of Price*. Available online.

2.) Steven Landsburg. *Price Theory and Applications*.

3.) Alfred Marshall. *Principles of Economics*. Available online.

*Technology*   You are **required** to have access to a ChatGPT Plus subscription (or equivalent) for the duration of this course. See individual assignments for LLM use expectations. You may use a simple calculator on exams.

*Office Hours*   Tuesday 3:00–4:00 pm in Red Hill suite or by appointment via Zoom.

*Announcements*   Important information and additional resources will be sent to your email via Canvas. To ensure you receive them, please add notifications@instructure.com to your safe-sender list.

*Grading Scale*

| Letter | Grade | Quality | Quality Points | Not included in GPA calculation: |
|--------|-------|---------|----------------|----------------------------------|
| A | 93–100 | Superior | 4.00 | P: Pass |
| A− | 90–92 | | 3.67 | I: Incomplete |
| B+ | 87–89 | Above Average | 3.33 | W: Withdrawal |
| B | 83–86 | | 3.00 | WP: Withdrawal |
| B− | 80–82 | | 2.67 | while passing |
| C+ | 77–79 | | 2.33 | X: Audit |
| C | 73–76 | Average | 2.00 | N: Non-credit course |
| C− | 70–72 | | 1.67 | T: Transfer |
| D+ | 67–69 | | 1.33 | |
| D | 63–66 | Below Average | 1.00 | |
| D− | 60–62 | | 0.67 | |
| F | 0–59 | Failure | 0.00 | |
| WF | | Withdraw While Failing | 0.00 | |
| XF | | Academic Disciplinary Failure | 0.00 | |

# REQUIRED WORK

*Overview*

| Component | Weight |
|-----------|--------|
| Participation | 10 % |
| Problem Sets (5) | 25 % |
| Pricing Puzzles HW | 5 % |
| Coasify HW | 10 % |
| Econ Naturalist HW | 10 % |
| Midterm Exam | 15 % |
| Final Exam | 25 % |

*Participation*   Includes surveys, in-class participation, and mandatory office hours. 10%.

*Problem Sets*   Qualitative and quantitative homework assignments; these will be available at least 5 days before their due date. The use of LLMs is permitted for the problem sets, but I strongly encourage you to first attempt them by yourself and then work with your peers. *The very best way to study for the exams is to study the problem sets.* $5 \times 5\%$.

| | |
|---|---|
| *Pricing Puzzles* | See handout. 5%. |
| *Coasify* | See handout. 10%. |
| *Econ Naturalist* | See handout. 10%. |
| *Exams* | One midterm (15%) and one final (25%). Material from required reading and lectures. If you get an *A* on the final, you get an *A* in the course. |

## RESOURCES

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|---|---|
| *Econ Review* | For video review of your principles course, see Marginal Revolution University. For economic terminology, lucidly explained, see *The Economist's* The A to Z of Economics. For a deeper dive into economists and economic concepts, see EconLib's Concise Encylopedia of Economics. Go to EconGraphs.org to play with graphs. |
| *Math Review* | For a general math review, see *Introductory Mathematics for Economists*. For a wonderful introduction to "those beautiful methods of reckoning which are generally called by the terrifying names of the Differential Calculus and the Integral Calculus," see *Calculus Made Easy*, or better yet 3Blue1Brown's The Essence of Calculus. See also mathematical supplements on our course website. |
| *Library Services* | Search the college library. |
| *Registrar* | Formally enrolled students and select visitors may attend lectures. See the Office of the Registrar. For college-wide important dates and add/drop deadlines, see the academic calender. |

## CONDENSED CALENDAR

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|---|---|
| Aug. 26 | FIRST DAY OF CLASS |
| Aug. 28 | Survey 1 |
| Sep. 11 | Problem Set 1 |
| Sep. 16 | NO CLASS – PHC FAITH AND REASON LECTURE |
| Sep. 30 | Problem Set 2 |
| Oct. 9 | NO CLASS – OCTOBER BREAK |
| Oct. 14 | Problem Set 3 |
| Oct. 16 | MIDTERM EXAM! |
| Oct. 21 | Survey 2 |
| Oct. 28 | Pricing Puzzles HW |
| Nov. 4 | NO CLASS – FALL BREAK |
| Nov. 11 | Problem Set 4 |
| Nov. 18 | Coasify HW |
| Nov. 25 | Econ Naturalist HW |
| Nov. 27 | NO CLASS – THANKSGIVING BREAK |
| Dec. 4 | Problem Set 5, Survey 3 |
| Dec. 5-8 | READING DAYS |
| Dec. 9-12 | FINAL EXAM! |

# DETAILED CALENDAR

★ = required, ▷ = recommended, + = mathematical supplement, ✓ = due!

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Aug. 26    THE ECONOMIC WAY OF THINKING
    ★ Syllabus
    ▷ Gary Becker. "The Economic Approach to Human Behavior" pp 3-14.
    ▷ Douglas Hofstadter. "Analogy as the Core of Cognition" (video).
    ▷ Kurtis Hingl. "Economic Storytelling."

Aug. 28    WHAT DO ECONOMISTS KNOW?
    ★ A&A chs 1 & 2
    ★ HGH pp 9-16
    ▷ Kurtis Hingl. "Eleven-and-a-half Pillars of Economics."
    ✓ Survey 1

Sep. 2    SUPPLY AND DEMAND I: COORDINATION, EXCHANGE, WELFARE
    ★ A&A ch 4
    ★ HGH pp 28-35, 203-207
    ★ F.A. Hayek. "The Use of Knowledge in Society."

Sep. 4    SUPPLY AND DEMAND II: CURVE SHIFTS, ELASTICITY
    ★ A&A ch 5
    ★ HGH pp 132-144
    ▷ A&A chs 6, 8, & 9
    + Functions, inverse functions, logarithm functions, and derivatives.

Sep. 9    SUPPLY AND DEMAND III: DISTORTIONS
    ★ A&A ch 12
    ★ HGH pp 39-49
    ▷ Gordon Tullock. "The Welfare Costs of Tariffs, Monopolies, and Theft."
    ▷ Kurtis Hingl. "Tariffs, you say?"

Sep. 11    SUPPLY AND DEMAND IV: COMPETITIVE EQUILIBRIUM
    ★ A&A ch 10
    ★ Steven Landsburg. "The Indifference Principle."
    ★ Robin Hanson. "Incentives Are Not Enough."
    ✓ Problem Set 1

Sep. 16    NO CLASS – PHC FAITH AND REASON LECTURE

Sep. 18    CONSUMPTION I: UTILITY, INDIFFERENCE
    ★ A&A ch 3
    ★ HGH pp 70-90

Sep. 23    CONSUMPTION II: CONSUMER CHOICE
    ★ A&A ch 7
    ★ HGH pp 93-104
    + Constrained Optimization (video).

Sep. 25    CONSUMPTION III: SUBSTITUTION, DEMAND CURVE
    ★ HGH pp 104-125
    ▷ HGH pp 127-152

Sep. 30    PRODUCTION I: SPECIALIZATION, FIRMS
- ★ A&A chs 14 & 15
- ★ HGH pp 165-172, 176-182
- ▷ HGH pp 49-61
- ▷ Ronald Coase. "The Nature of the Firm."
- ✓ Problem Set 2

Oct. 2    PRODUCTION II: PRICE TAKERS, MARKET SUPPLY
- ★ A&A ch 16
- ★ HGH pp 192-199
- ▷ A&A chs 27 & 28

Oct. 7    PRODUCTION III: INPUTS, PRODUCTION FUNCTIONS
- ★ HGH pp 340-364
- ▷ Armen Alchian and Harold Demsetz. "Production, Information Costs, and Economic Organization."

Oct. 9    NO CLASS – OCTOBER BREAK

Oct. 14    PRODUCTION IV:
- ★ A&A ch 18
- ★ Armen Alchian. "Uncertainty, Evolution, and Economic theory."
- ✓ Problem Set 3

Oct. 16    MIDTERM EXAM!

Oct. 21    MARKET STRUCTURE I: COMPETITION, MONOPOLY
- ★ A&A ch 19
- ★ HGH pp 221-238
- ★ F.A. Hayek. "The Meaning of Competition."
- ✓ Survey 2

Oct. 23    MARKET STRUCTURE II: PRICE DISCRIMINATION
- ★ A&A ch 20
- ★ HGH pp 238-248
- ▷ Harold Demsetz. "Barriers to Entry."

Oct. 28    STRATEGIC BEHAVIOR I: GAMES, COOPERATION, CONFLICT
- ★ Turocy and Bernhard von Stengel. "Game theory."
- ★ HGH pp 280-288
- ▷ Game Theory, Conflict, and War (video).
- ✓ Pricing Puzzles HW

Oct. 30    STRATEGIC BEHAVIOR II: OLIGOPOLY, REPEATED GAMES
- ★ HGH pp 557-563, 288-300
- ▷ Peter Leeson. "Trading with Bandits."
- + Oligopoly models.

Nov. 4    NO CLASS – FALL BREAK

Nov. 6    STRATEGIC BEHAVIOR III: MANAGEMENT
- ★ A&A ch 39
- ★ HGH pp 385-390
- ★ Sebastian Bensusan. "Incentives as Selection Effects."
- ▷ Kurtis Hingl. "When should you hire the risky employee?"

Nov. 11    PROPERTY RIGHTS I: COASE
- ★ A&A ch 13
- ★ HGH pp 508-515
- ★ John Nye. "The Pigou Problem."
- ▷ Armen Alchian. "Some Economics of Property Rights."
- ▷ Kurtis Hingl. "Coasify."
- ✓ Problem Set 4

Nov. 13    PROPERTY RIGHTS II: PUBLIC & SOCIAL CHOICE
- ★ HGH pp 515-521
- ★ Harold Demsetz. "Toward a Theory of Property Rights."
- ▷ Ronald Coase. "The Lighthouse in Economics."
- ▷ Tyler Cowen. "Public Goods Definitions and Their Instituional Context."

Nov. 18    INFORMATION I: RISK, GAMBLES
- ★ HGH pp308-317
- ★ 3Blue1Brown Bayes Theorem (video).
- ▷ 3Blue1Brown Bayes' Rule (video).
- ✓ Coasify HW

Nov. 20    INFORMATION II: ASYMMETRY, INSURANCE
- ★ A&A ch 34
- ★ HGH pp 317-322
- ★ George Akerlof. "The Market for Lemons."

Nov. 25    TIME: INVESTMENT, FINANCE
- ★ A&A ch 30 & 35
- ★ HGH pp 456-478
- ✓ Econ Naturalist HW 1

Nov. 27    NO CLASS – THANKSGIVING BREAK

Dec. 2     MARKETS
- ★ HGH pp 443-448
- ★ Julian Simon. "An Almost Practical Solution to Airline Overbooking."
- ▷ Thomas Schelling. "An Essay on Bargaining."
- ▷ Scott Alexander. "Prediction Market FAQ."

Dec. 4     ECONOMIC WAY OF THINKING: FINALE
- ★ Peter Leeson, August Hardy, and Paola Suarez. "Hobo Economicus."
- ★ Gordon Tullock. "The Transitional Gains Trap."
- ✓ Problem Set 5
- ✓ Survey 3

Dec. 9-12  FINAL EXAM!

# POLICIES

*Technology*  Using digital technology for note taking during lectures is permitted if used flat on a desk, but, for the benefit of your peers, upright laptops are *not* permitted. Recording of lectures, audio or video, is *not* permitted. The use of LLMs is permitted and required for various assignments. You are responsible for all work submitted in your name.

*Late Work*  Assignments submitted past the designated deadline are ineligible for credit. In case of emergency, credit will be shifted to your final exam.

*Academic Integrity*  As found in the college catalog: *The principles of truth and honesty are recognized as absolutely essential in every community of learning. It is expected that these principles will be scrupulously followed in all academic endeavors at Patrick Henry College, including, but not limited to, the preparation of all papers and reports and the taking of examinations. All academic work must be done by the student without unauthorized aid. Any compromise of truth or honesty, including, but not limited to, plagiarism, unauthorized collaboration, violation of guidelines under which the work is to be done, fabrication of data, unauthorized use of computer data or computer tools (including artificial intelligence), submission of a paper twice for the same course, submission of the same paper for multiple courses, and excessive revision by someone other than the student, may be considered sufficient grounds for suspension or expulsion from the College. Students may be given a grade of "XF" if it is determined that they have plagiarized or cheated in a course. The "XF" on a transcript indicates that a student violated integrity of scholarship policies. Students who successfully retake a course for which they have received an "XF" will have the "X" removed from their transcripts although the "F" will remain. The "XF" (or "F") and the grade earned in the retaken course will be used to calculate the grade point average.*

*Disability Accommodations*  As found in the college catalog: *Patrick Henry College is committed to providing reasonable accommodations for students with disabilities. Students with a documented disability must contact the Office of the Dean of Academic Affairs before the end of the Drop/Add period in their first semester (or as soon as possible after the initial diagnosis) to request accommodations and provide documentation to verify the disability. Before the end of the Drop/Add period at the start of each term, students must also request accommodations in writing from the professor from whom they seek accommodations. Professors who have not been notified by the end of the Drop/Add period are not obligated to provide accommodations.*

*Attendance*  Routine absence will negatively affect your participation grade. As found in the college catalog: *Students are strongly encouraged to attend each and every class scheduled during the semester. There is no better way to perform well in any class than by attending the regularly scheduled lectures. However, there may be times when students cannot make a lecture, due to illness, participation in a sanctioned college event, or other conflicting commitments. While students should strive to avoid such conflicts, college is a very busy time and conflicts may occur Patrick Henry College does not mandate an academic penalty for a student who misses a class, although a zero may be received for any unfulfilled class requirements. Students participating in college sanctioned events will know about any conflicts well in advance and are expected to discuss these with their professors to arrange for dealing with affected assignments prior to the absence.*

*This syllabus may be updated; the latest version will always appear on the course site.*