

# ECON3101

## Microeconomics 3

### (Topics in Applied Microeconomics)

Modern economics is a way of thinking that provides important insights into human behaviour and how the world works. The emphasis in Microeconomics 3 is on deepening students' understanding of the basic principles of microeconomics and learning how to use these principles to analyse real world problems and policy issues. The course builds upon the material covered in Microeconomics 1 and 2 by treating some of the concepts introduced in previous microeconomic courses with greater degree of formality. The course also covers more advanced tools of microeconomic theory and applications of the theory to a range of economic problems. Topics and techniques that are [or might potentially be] emphasized include: concepts and measurement of individual and aggregate consumer welfare, partial and general equilibrium efficiency analysis, choice under uncertainty and information economics.

<b>Mode of Delivery</b>	On campus
<b>Prerequisites</b>	<ul style="list-style-type: none"> <li>• Students must have successfully completed either ECON2101 (Microeconomics 2(P)) or ECON2111 (Microeconomics 2(H)).</li> <li>• While it is not a formal prerequisite, the material covered in EMET1001 (Foundations of Economic and Financial Models) will be assumed knowledge in this course.</li> </ul>
<b>Incompatible Courses</b>	None listed.
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<b>Office hours for student consultation:</b>	TBA
<b>Research Interests</b>	<ul style="list-style-type: none"> <li>• Microeconomic Theory;</li> <li>• Applied Microeconomics;</li> <li>• Microeconometrics.</li> </ul>
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SEMESTER ONE, 2018

## COURSE OVERVIEW

### Learning Outcomes

On satisfying the requirements for this course, students should have the knowledge and skills to:

1. Think for themselves like economists, or at least understand how economists think;
2. Recognise the economic aspects in a problem and apply the appropriate tools to analyse it; and
3. Understand the economic tools taught in this class and appropriate earlier classes, and be able to apply them to analyse real world problems and policy issues.

### Assessment Summary

Assessment Task	Potential Value	Due Date	Date for Return of Assessment
1. Online Quiz One (One Hour, Multiple Choice)	5 % (Optional and Redeemable)	TBA (In Week 3)	Results and feedback provided upon conclusion of the period in which the exam may be undertaken.
2. Mid-Semester Exam (Fifteen Minutes Reading, Two Hours Writing)	20 % (Optional and Redeemable)	TBA (In Week 6)	Results announced in Week 7. Exam viewing times TBA.
3. Online Quiz Two (One Hour, Multiple Choice)	5 % (Optional and Redeemable)	TBA (In Week 9)	Results and feedback provided upon conclusion of the period in which the exam may be undertaken.
3. Final Exam (Fifteen Minutes Reading, Three Hours Writing)	70 %	TBA (In the official final exam period)	Exams may be viewed at some point after the final grades have been officially released.

Please note that the mid-semester exam, online quiz 1, and online quiz 2 are all both optional and redeemable. As such, there will be no special examinations for these assessment items under any circumstances. Instead the relevant assessment weighting will be moved to the final exam.

### Research-Led Teaching

The material taught in this course is directly relevant to various applied microeconomic research topics that have been considered by economists in academia, various public sector agencies, and various private sector organisations.

## **Feedback**

### **Staff Feedback**

Students will receive specific feedback on their performance in the online quizzes upon conclusion of the period in which the exam may be undertaken. They will also receive general feedback on the mid-semester exam for this course in lectures. Students may obtain more specific feedback on their mid-semester exam performance from the teaching staff for the course by scheduling a private consultation with the relevant staff member. Students will also have the opportunity to obtain feedback on any topic related to this course during their scheduled tutorial sessions and the regular consultation sessions that are held by the teaching staff in this unit. I highly encourage students to avail themselves of these opportunities.

### **Student Feedback**

ANU is committed to the demonstration of educational excellence and regularly seeks feedback from students. One of the key formal ways students have to provide feedback is through Student Experience of Learning Support (SELS) surveys. The feedback given in these surveys is anonymous and provides the Colleges, University Education Committee and Academic Board with opportunities to recognise excellent teaching, and opportunities for improvement.

For more information on student surveys at ANU and reports on the feedback provided on ANU courses, go to

<http://unistats.anu.edu.au/surveys/selt/students/> and  
<http://unistats.anu.edu.au/surveys/selt/results/learning/>

## **Policies**

ANU has educational policies, procedures and guidelines, which are designed to ensure that staff and students are aware of the University's academic standards, and implement them. You can find the University's education policies and an explanatory glossary at: <http://policies.anu.edu.au/>

Students are expected to have read the Academic Misconduct Rules 2014 before the commencement of their course.

Other key policies include:

- Student Assessment (Coursework)
- Student Surveys and Evaluations

## **Workload Expectations**

The amount of work required for successful completion of this subject may vary between students. As a rough guide, students should expect to devote at least 10 hours a week to this unit. This should include all of the following.

- 3 hours a week: lectures.
- 1 hour a week: tutorials.
- At least 6 hours a week: reading, research, writing, lecture and tutorial preparation.

## Examination material or equipment

Other than writing related equipment (such as pens, pencils, erasers, sharpeners, and rulers), only a non-programmable calculator may be used in either of the exams for this subject.

## Recommended Resources

There is no required textbook for this course. A suggested reading list is provided at the end of this syllabus. However, I highly recommend that students have access to both a good “intermediate microeconomics” textbook and a good “principles of microeconomics” textbook throughout this course. I will arrange to have copies of some of each type of book placed on short-loan in the ANU library system. There is no requirement that you purchase any textbooks for this course.

## **COURSE SCHEDULE**

This is only an approximate draft schedule for this course. It is subject to change. Assessment items have been highlighted.

<b>Weeks</b>	<b>Summary of Activities</b>
1 to 2	The Measurement of Individual Welfare
3	<b>Online Quiz 1</b>
3 to 4.5	The Measurement of Social Welfare
4.5 to 5	Market Successes, Market Failures, and Policy Evaluation
6	<b>Mid-Semester Exam</b> and Review of Mid-Semester Exam
7 to 8	The Economic Approach to Cost-of-Living Indices
9	<b>Online Quiz 2</b>
9 to 10	The Regulation of Natural Monopolies
11 to 12	Compensating Differentials
Final Exam Period	<b>Final Exam</b>

## **ASSESSMENT REQUIREMENTS**

- As an academic integrity control, students may be selected for a fifteen-minute individual oral examination of their written assessment submissions.
- Any student identified, either during the current semester or in retrospect, as having used ghost writing services will be investigated under the University’s Academic Misconduct Rule.

## **Assessment Task 1**

Assessment Task:	Online Quiz One
Details of task:	This will be a one-hour multiple-choice exam that is administered online during week three of the semester. More details will be announced at a later date.
Estimated return dates:	Results and general feedback will be available immediately after the exam period has concluded.
Value:	This online quiz is worth (at most) 5 % of your raw mark for this course. However, this component is both optional and redeemable. It will only count towards your raw mark if it exceeds your mark on the final exam. If your mark for this online quiz does not exceed your mark on the final exam, then the five percentage points allocated to this quiz will be reallocated to the final exam.
Purpose:	The purpose of this assessment item is to test both your understanding of the material covered in the relevant part of this course and your ability to apply that material to problems from economics, finance, and business studies.
Note:	Since this assessment item is both optional and redeemable, no special arrangements will be made for students who do not complete this item, regardless of the reason for not doing so. The weight from this assessment will simply be transferred to the final exam for any such students.

## **Assessment Task 2**

Assessment Task:	Mid-Semester Exam
Details of task:	This will be a formal exam consisting of fifteen minutes of reading time and two hours of writing time. It will consist of a number of problems that are related to the material covered in at least one of the following: (i) lectures in weeks one to four, (ii) tutorials in weeks two to five, and (iii) the associated readings. It will be held sometime during week six and will replace the first two hours of lectures for this course in that week.
Estimated return dates:	Marks will be posted on the Wattle site for the unit by the end of week seven. Potential exam viewing times will be announced at that point.
Value:	The mid-semester exam is worth (at most) 20 % of your raw mark for this course. However, this component is both optional and redeemable. It will only count towards your raw mark if it exceeds your mark on the final exam. If your mid-semester exam mark does not exceed your mark on the final

exam, then the twenty percentage points allocated to the mid-semester exam will be reallocated to the final exam.

**Purpose:** The purpose of this assessment item is to test both your understanding of the material covered in the relevant part of this course and your ability to apply that material to problems from economics, finance, and business studies.

**Note:** Since this assessment item is both optional and redeemable, no special arrangements will be made for students who do not complete this item, regardless of the reason for not doing so. The weight from this assessment will simply be transferred to the final exam for any such students.

### **Assessment Task 3**

**Assessment Task:** Online Quiz Two

**Details of task:** This will be a one-hour multiple-choice exam that is administered online during week three of the semester. More details will be announced at a later date.

**Estimated return dates:** Results and general feedback will be available immediately after the exam period has concluded.

**Value:** This online quiz is worth (at most) 5 % of your raw mark for this course. However, this component is both optional and redeemable. It will only count towards your raw mark if it exceeds your mark on the final exam. If your mark for this online quiz does not exceed your mark on the final exam, then the five percentage points allocated to this quiz will be reallocated to the final exam.

**Purpose:** The purpose of this assessment item is to test both your understanding of the material covered in the relevant part of this course and your ability to apply that material to problems from economics, finance, and business studies.

**Note:** Since this assessment item is both optional and redeemable, no special arrangements will be made for students who do not complete this item, regardless of the reason for not doing so. The weight from this assessment will simply be transferred to the final exam for any such students.

### **Assessment Task 4**

**Assessment Task:** Final Exam

**Details of task:** This will be a formal exam consisting of fifteen minutes of reading time and three hours of writing time. It will consist of a number of problems that are related to any of the material covered in this course. This includes material covered in lectures, material covered in tutorials, and material covered in

the suggested reading. It will be held sometime during the official final exam period. The date, time, and location will be determined by the University administration.

Estimated return dates:	The final exam script books will be available for viewing at some point following the release of the official results for Semester One in 2017.
Value:	The final exam is worth (at least) 70 % of your raw mark for this course.
Purpose:	The purpose of this assessment item is to test both your understanding of the material covered in this course and your ability to apply that material to problems from economics, finance, and business studies.

### **Extensions and penalties**

No submission of assessment tasks without an extension after the due date will be permitted. If an assessment task is not submitted by the due date and an extension has not been granted or alternative arrangements have not been authorised, then a mark of 0 will be awarded.

### **Scaling**

Your final mark for the course will be based on the **raw** marks allocated for each of your assessment items. However, your final mark may not be the same number as produced by that formula, as marks may be **scaled**. Any scaling applied will preserve the rank order of raw marks (i.e. if your raw mark exceeds that of another student, then your scaled mark will exceed the scaled mark of that student), and may be either up or down.

### **Privacy Notice**

The ANU has made a number of third party, online, databases available for students to use. Use of each online database is conditional on student end users first agreeing to the database licensor's terms of service and/or privacy policy. Students should read these carefully.

In some cases student end users will be required to register an account with the database licensor and submit personal information, including their: first name; last name; ANU email address; and other information.

In cases where student end users are asked to submit 'content' to a database, such as an assignment or short answers, the database licensor may only use the student's 'content' in accordance with the terms of service – including any (copyright) licence the student grants to the database licensor.

Any personal information or content a student submits may be stored by the licensor, potentially offshore, and will be used to process the database service in accordance with the licensors terms of service and/or privacy policy.

If any student chooses not to agree to the database licensor's terms of service or privacy policy, the student will not be able to access and use the database. In these

circumstances students should contact their lecturer to enquire about alternative arrangements that are available.

## **SUPPORT FOR STUDENTS**

The University offers a number of support services for students. Information on these is available online from <http://students.anu.edu.au/studentlife/>

### **Other Information**

Building Access Hours

Both CBE and HW ARNDT are:

TEACHING PERIOD = Mon – Fri 07.45 to 21.15 and SAT, SUN and Public Holidays is not accessible by students.

Both CBE and HW ARNDT are:

NON TEACHING PERIOD = Mon – Fri 08.00 to 18.00 and SAT, SUN and Public Holidays is not accessible by students.

RSE has a Frequently Asked Questions page where you can find relevant policies and information on a broad range of topics, the onus is on the student to familiarise themselves with this page and the information available.

<https://www.rse.anu.edu.au/students/students/frequently-asked-questions/>

## COURSE OUTLINE AND READING GUIDE (INCOMPLETE DRAFT)

There is no required textbook for this course. Instead, readings are drawn from a variety of sources. An incomplete draft of these references is provided below. There is a fair degree of duplication of material across these references. As such, you do not need to read all of these references. However, you should read as many of them as necessary to thoroughly understand the material. **Note that the material covered in lectures, tutorials, and the readings are complements rather than substitutes.** Anything that is covered in at least one of these three components of the course material is potentially examinable unless I explicitly indicate otherwise.

While there is no required textbook for this course, I highly recommend that you have access to at least one good “principles of microeconomics” textbook at least one good “intermediate microeconomics” textbook. It would be useful to also have access to at least one good advanced undergraduate microeconomics textbook. I have listed some examples of such books below. Do not worry too much about the edition of such books unless they were published before about 1980. I will arrange to have copies of some of these books placed on short-loan in the ANU library system. There is no requirement that you purchase any textbooks for this course.

### Some Useful References for this Course

#### Principles of Microeconomics Textbooks

- Alchian, AA, and WR Allen (1983), *Exchange and production: Competition, coordination and control (third edition)*, Wadsworth, USA.
  - Any edition is fine.
- Case, KE, RC Fair, and SE Oster (2017), *Principles of economics (Twelfth edition) (Global edition)*, Pearson Education, Italy.
  - Any edition is fine.
- Gans, J, S King, M Byford, and NG Mankiw (2015), *Principles of microeconomics (sixth Australian edition)*, Cengage Learning Australia, China.
  - Any edition is fine.
- Heyne, PL, PJ Boettke, and DL Prychitko (2014), *The economic way of thinking (thirteenth edition)*, Pearson Education, USA.
  - Any edition is fine.

#### Intermediate Microeconomics Textbooks

- Hirshleifer, J, A Glazer, and D Hirshleifer (2005), *Price theory and applications: Decisions, markets, and information (seventh edition)*, Cambridge University Press, New York.
  - Any edition is fine.

- Perloff, JM (2014), *Microeconomics with calculus (third edition)*, Pearson Education, USA.
- Varian, HR (2014a), *Intermediate microeconomics: a modern approach (ninth edition)*, WW Norton and Company, USA.
  - Any edition is fine.
- Varian, HR (2014b), *Intermediate microeconomics with calculus (first edition)*, WW Norton and Company, USA.
  - This textbook is almost identical to Varian (2014a). The only substantive difference is that the material that uses calculus has been moved from the chapter appendices into the main body of the chapters.

### Advanced Undergraduate Microeconomics Textbooks

- Gravelle, H, and R Rees (2004), *Microeconomics*, Prentice-Hall and Financial-Times (Pearson Education), The United Kingdom.
  - Any edition is fine.
- Varian, HR (1992), *Microeconomic analysis (third edition)*, WW Norton and Company, USA.
  - This textbook is well worth consulting together with either Varian (2014a) or (2014b).
  - However, if you are consulting this textbook, you definitely want this edition. It is much easier to read than the first two editions of this book.

### Introductory Mathematical Techniques for Economic Analysis Textbooks

- Haeussler, EF Jr, and RS Paul (1987), *Introductory mathematical analysis for business, economics, and the life and social sciences (fifth edition)*, Prentice-Hall International Edition, Prentice-Hall, USA.
  - Any edition is fine.
- Newbold, P (1988), *Statistics for business and economics (second edition)*, Prentice-Hall, USA.
  - Any edition is fine.
- Shannon, J (1995), *Mathematics for business, economics and finance*, John Wiley and Sons, Brisbane.
- Sydsaeter, K, P Hammond, A Strom, and A Carvajal (2016), *Essential mathematics for economic analysis (fifth edition)*, Pearson Education, United Kingdom.
  - Any edition is fine.

### Intermediate Mathematical Techniques for Economic Analysis Textbooks

- Chiang, AC, and K Wainwright (2005), *Fundamental methods of mathematical economics (fourth edition)*, McGraw-Hill / Irwin, Singapore.

- Any edition is fine.
- Simon, CP, and L Blume (1994), *Mathematics for economists*, WW Norton and Company, USA.
- Sydsaeter, K, P Hammond, A Seierstad, and A Strom (2005), *Further mathematics for economic analysis*, Prentice Hall / Financial Times (Pearson Education), United Kingdom.

## Detailed Outline and Reading Guide

### Topic 1: The Measurement of Individual Welfare (Approximately 2 Weeks)

- Outline:
  - The Measurement of Consumer Welfare.
    - Demand Curves: Marginal Benefit, Total Benefit, and Marshallian Consumer Surplus.
    - Preferences, Constraints, and Optimisation.
    - Budget-Constrained Utility Maximisation and the Derivation of Marshallian Demand Curves.
    - Utility-Constrained Expenditure Minimisation and the Derivation of Hicksian Demand Curves.
    - The Slutsky Equation: Income Effects, Substitution Effects, and Total Effects.
    - Equivalent Variation, Compensating Variation, and Hicksian Consumer Surplus.
    - The Relationship Between Hicksian Demand Curves and Marshallian Demand Curves.
    - The Relationship Between Hicksian Consumer Surplus and Marshallian Consumer Surplus.
    - When is Marshallian Consumer Surplus a Reasonable Approximation of Hicksian Consumer Surplus?
  - The Measurement of Producer Welfare
    - Supply Curves: Marginal Cost, Total Variable Cost, and Producers Surplus.
    - Production Technologies, Constraints, and Optimisation.
    - Short-Run Versus Long Run.
    - Output-constrained cost minimization and the derivation of output-conditional input demand curves and the (total) cost function.
    - Profit maximization and the derivation of the output supply curve and unconditional input demand curves.
    - Producers Surplus Versus Economic Profit: Sunk Costs, Fixed Costs, and Variable Costs.
- Textbook Reading:
  - Boadway, RW, and N Bruce (1984), *Welfare economics*, Basil Blackwell Publisher, Great Britain: Chapters 1, 2, and 7.

- Cornes, R (1992), *Duality and modern economics*, Cambridge University Press, The United Kingdom.
- Deaton, A, and J Muellbauer (1980), *Economics and consumer behavior*, Cambridge University Press, USA: Chapters 1, 2, 3, 4, 5, and 6.
- Gravelle, H, and R Rees (1981), *Microeconomics*, Longman Group, USA: Chapters 2, 3, 4, 5, 6, 7, 8, and 9.
- Hirshleifer, J, A Glazer, and D Hirshleifer (2005), *Price theory and applications: Decisions, markets, and information (seventh edition)*, Cambridge University Press, New York: Chapters 2, 3, 4, 5, 6, and 7.
- Johanssen, P-O (1991), *An introduction to modern welfare economics*, Cambridge University Press, The United Kingdom: Chapter 4 and the Appendix.
- Jones, C (2005), *Applied welfare economics*, Oxford University Press, The United Kingdom: Chapter 1.
- Takayama, A (1993), *Analytical methods in economics*, The University of Michigan Press, USA: Appendix C.
- Varian, HR (1987), *Intermediate microeconomics: a modern approach*, WW Norton and Company, USA: Chapters 1, 2, 3, 4, 5, 6, 7, 8, 9, 15, 16, 18, 19, 20, 21, 22, 23, and the Mathematical Appendix.
- Varian, HR (1992), *Microeconomic analysis (third edition)*, WW Norton and Company, USA: Chapters 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 26, and 27.
- Other Reading:
  - Chipman, JS, and JC Moore (1980), “Compensating variation, consumer’s surplus, and welfare”, *The American Economic Review* 70(5), December, pp. 933–949.
  - Hausman, JA (1981), “Exact consumer’s surplus and deadweight loss”, *The American Economic Review* 71(4), September, pp. 662–676.
  - Randall, A, and JR Stoll (1980), “Consumer’s surplus in commodity space”, *The American Economic Review* 70(3), June, pp. 449–455.
  - Shonkwiler, JS (1991), “Consumer’s surplus revisited”, *The American Journal of Agricultural Economics* 73(2), May, pp. 410–414.
  - Willig, RD (1976), “Consumer’s surplus without apology”, *The American Economic Review* 66(4), September, pp. 589–597.
  - Wriggelsworth, JL, and HSE Gravelle (1987), “The three consumer surpluses as individual welfare measures”, *The Scottish Journal of Political Economy* 34(3), August, pp. 230–248.

## Topic 2: The Measurement of Social Welfare (Approximately 1.5 Weeks)

- Outline:
  - What is Social Welfare?
    - Should it Depend on the Welfare of the Individuals in a Society?
    - Efficiency: The Size of the Pie.
    - Equity: The Distribution of the Pie.
  - Social Welfare Functions as the Embodiment of Moral Principles.
    - The Utilitarian Social Welfare Function.
    - The Rawlsian Social Welfare Function.
    - A Dictatorial Social Welfare Function.
    - A Bergson-Samuelson Social Welfare Function.

- Do Social Welfare Functions Exist?
  - Arrow's Impossibility Theorem.
  - Are Individual Utilities Ordinal or Cardinal?
  - Are Inter-Personal Comparisons of Utility Legitimate?
  - Does a Social Welfare Function Depend on the Chosen Representation of an Individual's Utility Function?
- Economic Efficiency in its Various Guises.
  - Pareto Efficiency.
  - Incompleteness of Pareto Rankings.
  - Kaldor-Hicks Efficiency.
  - The Scitovsky Paradox.
- The Components of Economic Efficiency:
  - Allocative Efficiency.
  - Technical Efficiency.
  - Productive Efficiency.
  - Dynamic Efficiency.
- Textbook Reading:
  - Abelson, P (2013), *Public economics: Principles and practice (third edition)*, McGraw-Hill, China: Chapter 7.
  - Boadway, RW, and N Bruce (1984), *Welfare economics*, Basil Blackwell Publisher, Great Britain: Chapters 1, 3, 5, 6, 8, and 9.
  - Deaton, A, and J Muellbauer (1980), *Economics and consumer behavior*, Cambridge University Press, USA: Chapter 9.
  - Gravelle, H, and R Rees (1981), *Microeconomics*, Longman Group, USA: Chapter 17.
  - Hirshleifer, J, A Glazer, and D Hirshleifer (2005), *Price theory and applications: Decisions, markets, and information (seventh edition)*, Cambridge University Press, New York: Chapter 16.
  - Johanssen, P-O (1991), *An introduction to modern welfare economics*, Cambridge University Press, The United Kingdom: Chapters 2, 3, and 7.
  - Jones, C (2005), *Applied welfare economics*, Oxford University Press, The United Kingdom: Chapter 1.
  - Mueller, DC (2003), *Public choice III*, Cambridge University Press, Cambridge University Press, USA: Chapters 23, 24, 25, 26, and 27.
  - Varian, HR (1987), *Intermediate microeconomics: a modern approach*, WW Norton and Company, USA: Chapter 30.
  - Varian, HR (1992), *Microeconomic analysis (third edition)*, WW Norton and Company, USA: Chapter 22.
- Other Reading:
  - Arrow, KJ (1950), "A difficulty in the concept of social welfare", *The Journal of Political Economy* 58(4), August, pp. 328–346.
  - Eldridge, D (2004), "Economic Efficiency", Network Economics Consulting Group Briefing Note, Network Economics Consulting Group, Canberra, 10 August (???) Unpublished.
  - Hicks, JR (1939), "The foundations of welfare economics", *The Economic Journal* 49(196), December, pp. 696–712.
  - Hilmer, FG, MR Rayner and GQ Taperell (1993), *National competition policy*, The Final Report of the Committee of Inquiry into National Competition Policy, The Australian Government Publishing Service, Canberra: pp. 2-6.

- Kaldor, N (1939), “Welfare propositions of economics and interpersonal comparisons of utility”, *The Economic Journal* 49(195), September, pp. 549–552.
- Productivity Commission (2013), *On efficiency and effectiveness: Some definitions*, Productivity Commission Staff Research Note, Productivity Commission, Canberra.
- Samuelson, PA (1950), “Evaluation of real national income”, *Oxford Economic Papers (New Series)* 2(1), January, pp. 1–29.
- Samuelson, PA (1956), “Social indifference curves”, *The Quarterly Journal of Economics* 70(1), February, pp. 1–22.
- Scitovsky, T De (1941), “A note on welfare propositions in economics”, *The Review of Economic Studies* 9(1), November, pp. 77–88.

### Topic 3: Market Successes, Market Failures, and Policy Evaluation (Approximately 1.5 Weeks)

- Outline:
  - Partial equilibrium versus general equilibrium economic models.
  - The three fundamental welfare theorems.
    - Theorem 0: Voluntary trade must be Pareto improving if there are no impacts on parties not directly involved in the trade.
    - Theorem 1: Under some circumstances, a competitive equilibrium will be Pareto efficient. (The first fundamental theorem of welfare economics).
    - Theorem 2: Under some circumstances, any Pareto efficient outcome can be implemented as a competitive equilibrium following an appropriate initial lump-sum redistribution of resources. (The second fundamental theorem of welfare economics.)
  - Market failures and other undesirable features of some potential market outcomes.
    - Economists define a market failure to be a situation in which a competitive equilibrium fails to be Pareto efficient.
    - Four main sources of potential market failures.
      - Source 1: Imperfect competition.
      - Source 2: Externalities of various kinds (including public goods and common property resources as special cases).
      - Source 3: Asymmetric information.
      - Source 4: An infinite sequence of overlapping generations.
    - Some market outcomes may be Pareto efficient but still have other undesirable properties, such as an extremely unequal distribution of wealth.
  - Policy Evaluation.
    - Market failures and other failures of market outcomes form a potential normative basis for government policy intervention in the economy.
      - But only if the government can improve on the social welfare properties of the market outcome.
    - If lump-sum taxes exist, then the second fundamental theorem of welfare economics tells us that there is no need to trade-off economic efficiency in order to address equity concerns.

- But lump sum taxes are both rare and often politically unpalatable. As such, there will typically be a trade-off between economic efficiency and equity.
  - Second-best welfare economics: It can sometimes be difficult to determine “which way is up” from a policy perspective when there are multiple distortions in the economy and those distortions potentially interact with each other.
- Textbook Reading:
  - Abelson, P (2013), *Public economics: Principles and practice (third edition)*, McGraw-Hill, China: Chapters 3 and 4.
  - Boadway, RW, and N Bruce (1984), *Welfare economics*, Basil Blackwell Publisher, Great Britain: Chapters 1, 3, 4, 8, and 9.
  - Gravelle, H, and R Rees (1981), *Microeconomics*, Longman Group, USA: Chapters 10, 16, and 18.
  - Hirshleifer, J, A Glazer, and D Hirshleifer (2005), *Price theory and applications: Decisions, markets, and information (seventh edition)*, Cambridge University Press, New York: Chapters 1, 2, 7, 14, and 16.
  - Johanssen, P-O (1991), *An introduction to modern welfare economics*, Cambridge University Press, The United Kingdom: Chapters 2 and 5.
  - Jones, C (2005), *Applied welfare economics*, Oxford University Press, The United Kingdom: Chapter 1.
  - Leach, J (2004), *A course in public economics*, Cambridge University Press, The United Kingdom: Chapters 1, 2, 3, and 26.
  - Myles, GD (1995), *Public economics*, Cambridge University Press, The United Kingdom: Chapters 1 and 2.
  - Tresch, RW (2015), *Public finance: A normative theory (third edition)*, Academic Press (an imprint of Elsevier), USA: Chapters 1, 2, 3, and 12.
  - Varian, HR (1987), *Intermediate microeconomics: a modern approach*, WW Norton and Company, USA: Chapters 1, 17, 24, 28, and 29.
  - Varian, HR (1992), *Microeconomic analysis (third edition)*, WW Norton and Company, USA: Chapters 13, 17, 18, and 21.
- Other:
  - Bator, FM (1957), “The simple analytics of welfare maximization”, *The American Economic Review* 47(1), March, pp. 22–59.
  - Bator, FM (1958), “The anatomy of market failure”, *The Quarterly Journal of Economics* 72(3), August, pp. 351–379.
  - Harberger, AC (1971), “Three basic postulates for applied welfare economics: An interpretative essay”, *The Journal of Economic Literature* 9(3), September, pp. 785–797.
  - Lipsey, RG, and K Lancaster (1956), “The general theory of the second best”, *The Review of Economic Studies* 24(1), pp. 11–32.

#### Topic 4: The Economic Approach to Cost-of-Living Indices (Approximately 2 Weeks)

- Outline:
  - Two economic motivations for the construction and use of price indices (microeconomic and macroeconomic).
  - Types of discrete price indices.

- Fixed basket indices (Lowe, Laspeyres, Paasche, Fisher's Ideal, Drobisch-Sidgwick-Bowley, and Tornqvist).
      - The relationship between fixed basket price indices and revealed preference measures of the welfare impact of changes in prices.
    - Fixed utility indices (Konus).
      - The relationship between fixed utility price indices and axiomatic preference measures of the welfare impact of changes in prices.
    - Chained price indices.
  - Other issues (if time permits).
    - Sub-indices and commodity aggregation.
    - Seasonality.
    - Mismatched weighting and price periods.
    - Price dispersion.
    - Durable goods.
    - Quality changes and new goods.
  - Example: The Australian Consumer Price Index.
- Textbook Reading:
  - Deaton, A, and J Muellbauer (1980), *Economics and consumer behavior*, Cambridge University Press, USA: Chapter 7.
  - Gravelle, H, and R Rees (1981), *Microeconomics*, Longman Group, USA: pp. 112–119.
  - Hirshleifer, J, with the assistance of M Sproul (1988), *Price theory and applications (fourth edition)*, Prentice-Hall, USA: pp. 145–151.
  - Newbold, P (1988), *Statistics for business and economics (second edition)*, Prentice-Hall, USA: Chapter 16.
  - Pollack, RA (1989), *The theory of the cost-of-living index*, Oxford University Press, USA.
  - Varian, HR (1987), *Intermediate microeconomics: a modern approach*, WW Norton and Company, USA: pp. 126–130.
- Other Reading:
  - Abraham, KG, JS Greenlees, and BR Moulton (1998), “Working to improve the consumer price index”, *The Journal of Economic Perspectives* 12(1), Winter, pp. 27–36.
  - ABS: The Australian Bureau of Statistics (2011), *Consumer price index: Concepts, sources and methods, Australia*, ABS Information Paper, ABS Catalogue Number 6461.0, The Australian Bureau of Statistics, Canberra, 19 December.
  - Banzhaf, HF (2004), “The form and function of price indexes: A historical accounting”, *The History of Political Economy* 36(4), Winter, pp. 589–616.
  - Boskin, MJ, ER Dulberger, RJ Gordon, Z Griliches, and DW Jorgenson (1998), “Consumer prices, the consumer price index, and the cost of living”, *The Journal of Economic Perspectives* 12(1), Winter, pp. 3–26.
  - Deaton, A (1998), “Getting prices right: What should be done?”, *The Journal of Economic Perspectives* 12(1), Winter, pp. 37–46.
  - Diewert, WE (1998), “Index number issues in the consumer price index”, *The Journal of Economic Perspectives* 12(1), Winter, pp. 47–58.

- Hausman, J (2003), “Sources of bias and solutions to bias in the consumer price index”, *The Journal of Economic Perspectives* 17(1), Winter, pp. 23–44.
- Konus, AA (1939), “The problem of the true index of the cost of living”, *Econometrica* 7(1), January, pp. 10–29.
- Lebow, JE, and JB Rudd (2003), “Measurement error in the consumer price index: Where do we stand?”, *The Journal of Economic Literature* 41(1), March, pp. 159–201.
- Moulton, BR, KE Moses, RJ Gordon, and BP Bosworth (1997), “Addressing the quality change issue in the consumer price index”, *Brookings Papers on Economic Activity* 1997(1), pp. 305–366.
- Nordhaus, WD (1998), “Quality changes in price indexes”, *The Journal of Economic Perspectives* 12(1), Winter, pp. 59–68.
- Pollak, RA (1998), “The consumer price index: A research agenda and three proposals”, *The Journal of Economic Perspectives* 12(1), Winter, pp. 69–78.
- Tornqvist, L (1936), “The Bank of Finland’s consumption price index”, *The Bank of Finland Monthly Review* 16(10), October, pp. 27–34.

### Topic 5: The Regulation of Natural Monopolies (Approximately 2 Weeks)

- Outline:
  - What is a natural monopoly?
    - The focus is on productive efficiency.
    - Productive efficiency when the cost function is sub-additive.
    - Single output technologies and multiple output technologies.
    - Pervasive economies of scale and pervasive economies of scope.
    - The allocation of common costs (bounds involving marginal cost and stand alone cost, and the economic definition of cross-subsidy).
    - A natural monopoly may or may not be a sustainable monopoly in the absence of regulatory barriers to entry.
  - Regulating a natural monopolist: Some benchmark approaches.
    - Linear pricing approaches.
      - Complete Information, First Best, Part 1: If fixed costs are sunk, why not just force it to price at marginal cost? (Hint: Possible dynamic efficiency issues).
      - Complete Information, First-Best, Part 2: What about marginal cost pricing with a subsidy to cover any loss, where the subsidy is funded from lump-sum taxation? (Hint 1: Lump-sum taxes are typically neither available nor politically feasible. Hint 2: Possible problems with cost-padding and gold plating by the regulated firm.)
      - Complete Information, Second-Best, Part 1: What about marginal cost pricing with a subsidy to cover any loss, where the subsidy is funded from distortionary taxation? (Hint: Possible problems with cost-padding and gold plating by the regulated firm.)
      - Complete Information, Second-Best, Part 2: Ramsey-Boiteux pricing. What about choosing mark-ups over marginal cost to



- Faulhaber, GR (1975), “Cross-subsidization: Pricing in public enterprises”, *The American Economic Review* 65(5), December, pp. 966–977.
- Faulhaber, GR, and SB Levinson (1981), “Subsidy-free prices and anonymous equity”, *The American Economic Review* 71(5), December, pp. 1083–1091.
- Hotelling, H (1938), “The general welfare in relation to problems of taxation and of railway and utility rates”, *Econometrica* 6(3), July, pp. 242–269.
- Loeb, M, and WA Magat (1979), “A decentralized method for utility regulation”, *The Journal of Law and Economics* 22(2), October, pp. 399–404.
- Mirman, LJ, D Samet, and Y Tauman (1983), “An axiomatic approach to the allocation of a fixed cost through prices”, *The Bell Journal of Economics* 14(1), Spring, pp. 139–151.
- Mirman, LJ, Y Tauman, and I Zang (1985), “Supportability, sustainability, and subsidy-free prices”, *The RAND Journal of Economics* 16(1), Spring, pp. 114–136.
- Oi, WY (1971), “A Disneyland dilemma: Two-part tariffs for a Mickey Mouse monopoly”, *The Quarterly Journal of Economics* 85(1), February, pp. 77–96.
- Panzar, JC (1989), “Technological determinants of firm and industry structure”, Chapter 1 (pp. 3–59) in Schmalensee, R, and RD Willig (Editors) (1989), *The Handbook of Industrial Organization Volume 1*, Elsevier Science Publishers BV, The Netherlands.
- Panzar, JC, and RD Willig (1977), “Economies of scale in multi-output production”, *The Quarterly Journal of Economics* 91(3), August, pp. 481–493.
- Ramsey, FP (1927), “A contribution to the theory of taxation”, *The Economic Journal* 37(145), March, pp. 47–61.
- Sappington, DEM, and DS Sibley (1988), “Regulating without cost information: The incremental surplus subsidy scheme”, *The International Economic Review* 29(2), May, pp. 297–306.
- Shepherd, WG (1992), “Ramsey pricing: Its uses and limitations”, *Utilities Policy* 2(4), October, pp. 296–298.
- Sherman, R (1985), “The Averch and Johnson analysis of public utility regulation twenty years later”, *The Review of Industrial Organization* 2(2), pp. 178–193.
- Vogelsang, I, and J Finsinger (1979), “A regulatory adjustment process for optimal pricing by multiproduct monopoly firms”, *The Bell Journal of Economics* 10(1), Spring, pp. 157–171.

## Topic 6: Compensating Differentials (Approximately 2 Weeks)

- Outline:
  - What is the problem?
    - Valuing amenities that are not explicitly traded.
  - Why might we want to do this?
    - Explaining differences in wages for otherwise identical people.
    - Predicting the likely impact of changes to mandatory benefit laws in labour markets.
  - Analytical framework.
    - A theoretical framework for amenity valuation.
    - Implicit markets and hedonic prices.

- How might we empirically implement it?
  - Applications to labour markets.
- Textbook Reading:
  - Ehrenberg, RG, and RS Smith (2016), *Modern labor economics: Theory and public policy (twelfth edition)*, Routledge (Taylor and Francis), USA: Chapter 8.
- Other Reading:
  - Brown, C (1980), “Equalizing differences in the labor market”, *The Quarterly Journal of Economics* 94(1), February, pp. 113–134.
  - Hamermesh, DS, and JR Wolfe (1990), “Compensating wage differentials and the duration of wage loss”, *The Journal of Labor Economics* 8(1)(Part 2), January, pp. S175–S197.
  - Hamermesh, DS (1999), “Changing inequality in markets for workplace amenities”, *The Quarterly Journal of Economics* 114(4), November, pp. 1085–1123.
  - Killingsworth, MR (1987), “Heterogeneous preferences, compensating wage differentials, and comparable worth”, *The Quarterly Journal of Economics* 102(4), November, pp. 727–742.
  - Rosen, S (1974), “Hedonic prices and implicit markets: Product differentiation in pure competition”, *The Journal of Political Economy* 82(1), January to February, pp. 34–55.
  - Rosen, S (1986), “The theory of equalizing differences”, Chapter 12 (pp. 641–692) in Ashenfelter, O, and R Layard (Editors) (1986), *Handbook of labor economics, Volume 1*, North-Holland, The Netherlands.
  - Smith, RS (1979), “Compensating wage differentials and public policy: A review”, *The Industrial and Labor Relations Review* 32(3), April, pp. 339–352.
  - Stern, S (2004), “Do scientists pay to be scientists?”, *Management Science* 50(6), June, pp. 835–853.
  - Withers, G (1985), “Artists’ subsidy of the arts”, *Australian Economic Papers* 24(45), December, pp. 290–295.