DALHOUSIE UNIVERSITY
Inspiring Minds

PUBLIC ECONOMICS

STUDY MANUAL

DR. MARY KILFOIL

Thomas Storring

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LESSONS

ABOUT THE AUTHORS

DR. MARY KILFOIL, BBA (ST. F.X.), BA (SMU), MA (CARLETON), PHD (DAL)

Mary Kilfoil holds graduate degrees from Carleton University M.A., Economics) and Dalhousie University (Ph.D., Economics), as well as undergraduate degrees in business administration (B.B.A., St. F.X.) and economics (B.A., Honours, SMU). Her fields of concentration are quantitative analysis (econometrics), research methods, and labour economics. She has held teaching positions at Acadia University, Mount St. Vincent University, Saint Mary's University and at Dalhousie University (1993-present).

While at the School of Public Administration at Dalhousie, Dr. Kilfoil has taught courses in Quantitative Methods, Economics, Research Methods, and Public Policy. She has also taught previous distance courses through the Office of Graduate Programs at Dalhousie in Economics (MBA - IT) and Quantitative Methods for the MBA (FS) and MBA (IT) programs. She has been actively involved in professional teaching seminars offered through the Office of Professional Development, Dalhousie University. Through her work with Henson College at Dalhousie, Dr. Kilfoil also has experience in curriculum and course development. She prepared and designed course work for a distance course in health economics offered through Henson College. This involved preparation of course materials, assignments, review questions, and testing materials.

Dr. Kilfoil's academic research interests are in the areas of labour economics, income inequality, public policy, economic well-being, and child poverty. Her doctoral dissertation was a comparative analysis of Canadian household earnings of married couples, adjusting for differences in the amount of time spent in the labour market, both across countries and over time. Among her most recent writings on earnings inequality and public policy is a paper entitled: "Are Canadian Couples Earning More or Just Working Harder?" recently presented at the Canadian Centre for Living Standards in Ottawa and submitted for publication at the Luxembourg Income Studies (LIS) publication series. This study included a cross-country comparison of public policy in the area of social assistance, maternity benefits, child care, and household earnings.

Mary Kilfoil is also a senior economist at Gardner Pinfold Consulting Economists in Halifax. She has conducted a wide range of economic analysis in national studies involving public policy and has

extensive firsthand experience in research methods and quantitative analysis.

THOMAS STORRING, BA (ACADIA), MPHIL (OXFORD)

Thomas Storring is the Director of Economics and Statistics at the Nova Scotia Department of Finance and the author of the lecture notes. Thomas Storring has an MPhil from the University of Oxford and a BA from Acadia University. He has practiced as an economist for over 14 years (both public and private sectors), covering a range of economic issues and methods: environmental policy, forestry, taxation, fiscal transfers and macroeconomic forecasting.

COURSE ELEMENTS

The course contains two elements: distance and intensive.

The distance element is a professor-guided self-study. The distance portion of the course contains:

a. Study Manual
b. Text (where applicable)
c. Readings Package (where applicable)
d. Assignment Guide (where applicable)
e. Discussion Forums

INTENSIVE

The intensive element is a compulsory classroom-based program held over two and a half days which includes lectures, presentations and an examination.

WEBSITE

https://dalhousie.blackboard.com/

LESSON NOTES

The Lesson Notes are intended to supplement the texts by providing additional perspective and stimulating classroom communication between the professor and students.

The Lesson Notes link the lessons together so you can build upon your knowledge in a logical fashion. Serving as a learning guide, the Lesson Notes are designed to help you practice and integrate the concepts presented throughout the textbook and study guide.

The components of each lesson are as follows:

Introduction: The Introduction provides a brief description of the lesson and outlines the significance of the topics covered.

Learning Path: The Learning Path is a step-by-step guide to learning activities for each lesson.

Learning Objectives: Assignments, classroom exercises and examinations are all based on the Learning Objectives which form the foundation of the course.

***Review Questions*:** These questions allow you to check your progress as you work through the lessons. Try each question before checking the answers. If you struggle with the questions, review the areas in which you are having difficulty until you feel comfortable enough to move on to the next section. Completing these questions is good practice for the final examination.

ASSIGNMENTS/EXTENSIONS

Assignments must be submitted by the assignment due date. Late assignments may receive a penalty grade as determined by the Professor. Dalhousie University will only consider documented exceptions to this rule, such as serious medical emergencies or problems of a similar nature. In exceptional circumstances, an extension of up to one week may be granted at the professor's discretion, if requested in advance of the due date.

STUDY AREA

The area in which you choose to study is important. Ideally, the area should be:

- sufficiently lighted;
- quiet;
- well-ventilated;
- secluded;
- comfortable;
- free from distractions.

STUDY HOURS

The amount of time needed for study will vary with your experience and educational background. A rough guide would be a minimum of 15-20 hours per week.

Many students find that following a set study schedule is the best way to accomplish their course objectives. The schedule itself should be definite, but it should also be flexible enough to adapt to unforeseen occurrences. However, these courses require a lot of time, and you should stick to your schedule as closely as possible.

CENTRE FOR ADVANCED MANAGEMENT EDUCATION CONTACT INFORMATION

Graduate management courses are very challenging, and there will, no doubt, be times when you feel isolated from the instructor and other learners. You may even ask yourself why you enrolled in the program! We encourage you to contact us by fax, email or phone, or to contact other learners in your area. (We will include a contact list on the communications page on your website.)

The Centre for Advanced Management Education manages your program. We in CFAME are always pleased to hear from you. You can call us at any time, and we will do our best to answer any question or solve any problem that you may have. We would also appreciate input as to how we can improve the course/program.

A list of the staff follows to better enable you to make direct inquiries.

CFAME STAFF

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PUBLIC ECONOMICS

STUDENT MANUAL

DALHOUSIE UNIVERSITY
Inspiring Minds

MPA

Welcome to the MPA (Management) Program. This Student Manual contains information regarding the course MGMT 5140.

Throughout the MPA (M) Program, you will receive similar manuals specific to each course. Though each manual is based on a standardized format, each contains unique information about the content and format of the course. It is, therefore, important that you read through this information carefully.

Should you have any comments or suggestions, please contact Morven Fitzgerald at (902) 494-6312 or mfitzgerald@mgmt.dal.ca.

ABOUT THE COURSE INSTRUCTOR

Stéphane Mechoulan holds a Ph.D. in Economics from Northwestern University, an M.A. in Economics from Paris-Jourdan Sciences Économiques and an HEC Master of Science Management. Dr. Mechoulan taught in the Department of Economics at the University of Toronto before joining the School of Public Administration as an Associate Professor in July 2009. His research interests include law and economics, health economics, and policy analysis. His work has appeared in leading journals such as the *Journal of Human Resources*, the *Journal of Law and Economics*, the *Journal of Legal Studies*, and the *Journal of Labor Economics*. His work has been funded by the American Statistical Association and the Social Science Human Research Council of Canada. His paper 'Market Structure and Communicable Diseases' received the 2008 Mundell Prize from the Canadian Economics Association.

Course Assistance

Throughout the duration of the course, you will frequently find it necessary to contact the course instructor. For all questions that are of general interest the best is to use the discussion board. For questions of a more personal nature (e.g., extension due to illness etc.) feel free to email. For emergencies, use the telephone. It would be helpful if prior to your message, you would organize your thoughts and make a list of your questions so that the discussion will be guided and on track.

Office Number: (902) 494-1097 Email: BLS Email or s.mechoulan@dal.ca

COURSE SYLLABUS

GOALS AND OBJECTIVES

This course introduces the fundamental concepts of macroeconomics, cost-benefit analysis and fiscal federalism, and enhances the analytical skills of practitioners in the public sector. It provides an understanding of basic macroeconomic theories and principles in considerable depth, keeping in mind that this course is a graduate-level course in an *interdisciplinary* program. It is also concerned with the use and application of macroeconomic theory, the relevance of this theory in economic decision-making and the role of government in the economy.

The course places special emphasis on the similarities as well as contradictions that exist between economic theory and observation, and the impact of government regulation and policies on the behaviour of households, firms and markets. It also provides the necessary tools to understand the relationship between economic theory and economic policy. While most students will not get directly involved in the setting of macroeconomic policy in their careers, an understanding of macroeconomic issues and variables such as interest rates has a direct application across government and the NGO sector. The examples presented in this course are based primarily on evidence drawn from the Canadian economy.

REQUIRED TEXTBOOK

Ragan, C.T.S. and R.G. Lipsey, **Economics**, (Fourteenth Canadian Edition), Toronto: Pearson Education Canada, 2014 (primary textbook).

Chapters from this book are assigned for reading on a weekly basis, as indicated in the Reading List. Other readings, such as articles, are included within the lesson notes and the instructor may suggest others as the course progresses.

BACKGROUND PREPARATION

In addition to a well-rounded undergraduate preparation, this course requires a basic understanding of certain mathematical concepts. The mathematical competencies required for this course are similar to those in MGMT 5135, namely: (a) the ability to read and interpret graphs, and to be able to use and apply graphical methods; and (b) a basic knowledge of algebra. As a refresher, a summary of the

mathematical tools used in this course is provided in Chapter 2 of the Ragan and Lipsey text. In addition, there is a short tutorial provided in Appendix B. The mathematical notes at the end of the book also provide useful additional information. Students are recommended to review basic mathematical principles and, if necessary, to go through an introductory mathematics textbook. If you find the mathematics challenging, please talk to the instructor as soon as possible.

STUDY GUIDE

There is a Study Guide accompanying the Ragan and Lipsey textbook. This is included to provide you with a wide range of questions and problems to test your lesson comprehension. The Study Guide is intended to be a useful complement to the textbook and Lesson Notes and suggested review questions are provided at the end of each Lesson. It is strongly recommended that you use the Study Guide as you progress through each Lesson, although it is not expected that you do all the questions in the Study Guide. Answering these questions will enhance your understanding of the subject matter and build your confidence.

THE LESSON NOTES

The Lesson Notes focus on key macroeconomic issues and their relevance to the public sector from a practioner's perspective. They have been designed to complement the textbook and help you understand real world applications.

The Lesson Notes rely heavily on the Ragan and Lipsey textbook as they review and enhance key concepts. Sections that have a direct connection with public policy have been expanded while those that are less relevant have been summarized or presented in an abbreviated form. The Lesson Notes should serve as a substitute for traditional lectures and complement the readings in a significant way.

Graphical analysis is a central component of this course. Many of the key concepts and discussion rely heavily on figures for clarity and completeness. Some figures in the Lesson Notes are taken from the Ragan and Lipsey textbook directly while others have either been summarized or modified to make them more applicable. It is recommended that you practice drawing the figures as you progress through the Lesson Notes to reinforce concepts. Some simple algebraic manipulation will be required to derive the key formulas and to express certain economic relationships; these are usually expressed in the form of equations, and only the most important of these have been included in the Lesson

Notes. The appendices and the mathematical notes in the textbook provide a more complete survey of the technical details.

COURSE ASSESSMENT

The aim of the assignments, group project and the final examination is to assess not only your basic understanding of economic principles, but also your ability to grasp important distinctions, such as that between economic theory and economic policy. This will assess your capacity for making sound judgments on the suitability of alternative policies to deal with different economic problems. You are also expected to demonstrate your ability to combine various aspects of theory, application and policy in your work. Possible topics for the project will be introduced early in the semester. A group should be composed of three to four students.

BREAKDOWN OF EVALUATION COMPONENTS:

Assignments (4)	30%
Project	20%
Class Participation	10%
Final Examination*	40%
TOTAL	100%

*You must pass the exam to pass this course.

Please note: All assignments **must** be typed, clearly presented and submitted through Blackboard.

***Assignments and Project*:** Course assignments and the project are an important part of the course. They provide you with an opportunity to receive feedback on your progress and allow the course instructor a chance to formally grade your work. As you can see from the grading scheme, they are worth a significant percentage of your final grade. To enable us to provide you and others in the class with timely feedback, it is essential that you meet the assignment deadlines.

Assignment	Due date	Lessons Covered
Assignment 1	Monday, February 2nd	1, 2, and 3
Assignment 2	Monday, March 2nd	4, 5, and 6
Assignment 3	Monday, March 23rd	7, 8, and 9
Assignment 4	Tuesday, April 7th	10, 11 and 12
Project	Monday, April 13th	All Lessons (1 – 13)

Please note: Assignments must be submitted by the assignment due date. The University will only consider documented exceptions to this rule, such as serious medical or family emergencies or problems of a similar nature. Any requests for extensions to the due date(s) must be approved in advance by the course instructor. Extensions will be granted only once, and are at the sole discretion of the professor.

***Class Participation*:** Every member of the class is expected to contribute to online discussions. The emphasis will be on the *quality* of the contribution, both in asking questions and in responding to questions and issues raised by others. Students are strongly encouraged to keep abreast of current economic events and raise issues for discussions that are of interest.

To structure participation and contribution, I encourage you to read at least one blog maintained by a major economist on a regular basis (and ideally two, from different schools of thought). The most followed Canadian-focused blog is Worthwhile Canadian initiative on http://worthwhile.typepad.com/

In addition, you are encouraged to play the following online monetary policy game and discuss your experience on Blackboard. The game is called the "Economia Game" and it is set up by the European Central Bank as educational tool on http://www.ecb.int/ecb/educational/economia/html/index.en.html

The objective is to replicate the challenges of a central banker and steer an economy to safe shores, maintaining a target inflation rate without triggering a recession. While the textbook material may suggest that a central banker pulls levers in a mechanical way, the game will show you that the reality is in fact much more nuanced and complex.

Similarly, I encourage you to go to the "inflation island" website, another European Central Bank educational tool on http://www.ecb.int/ecb/educational/inflationisland/html/index.en.html “Inflation

Island" explores how people react to inflation and deflation. You will test your knowledge and identify different inflation scenarios. The Island's "cinema" features videos and photos showing how inflation and deflation have affected various countries over the years.

The Bank of Canada also has excellent educational resources, although they are less 'entertaining': http://www.bankofcanada.ca/about/educational-resources/

APPENDIX A

POLICY ON INTELLECTUAL HONESTY

Originality of student work is mandatory. Acts of plagiarism will be dealt with according to University regulations. Please consult the Dalhousie University website for related policies and regulations.

FACULTY OF MANAGEMENT - ACADEMIC INTEGRITY

The commitment of the Faculty of Management is to graduate future leaders of business, government and civil society who manage with integrity and get things done. This is not negotiable in our community and it starts with your first class at Dalhousie University. So when you submit any work for evaluation in this course or any other, please ensure that you are familiar with your obligations under the Faculty of Management's Academic Integrity Policies and that you understand where to go for help and advice in living up to our standards. You should be familiar with the Faculty of Management Professor and Student Contract on Academic Integrity and it is your responsibility to ask questions if there is anything you do not understand.

Dalhousie offers many ways to learn about academic writing and presentations; so that all members of the University community may acknowledge the intellectual property of others. Knowing how to find, evaluate, select, synthesize and cite information for use in assignments is called being "information literate." Information literacy is taught by Dalhousie University Librarians in classes and through online tutorials. See Researching Ethically tutorial at http://infolit.library.dal.ca/tutorials/Plagiarism/. Do not plagiarize. For further guidance on what constitutes plagiarism, how to avoid it, and proper methods for attributing sources, please see http://plagiarism.dal.ca/Student%20Resources/

Please note that Dalhousie University now subscribes to Turnitin.com, a computer based service that checks for originality in submitted papers. Any paper submitted by a student at Dalhousie University may be checked for originality to confirm that the student has not plagiarized from other sources. Plagiarism is considered a very serious academic offence that may lead to loss of credit, suspension or expulsion from the University, or even the revocation of a degree. It is essential that there be correct attribution of authorities from which facts and opinions have been derived. At Dalhousie, there are University

Regulations which deal with plagiarism and, prior to submitting any paper in a course, students should read the Policy on Intellectual Honesty contained in the Calendar or on the Dalhousie web site at:

http://www.registrar.dal.ca/calendar/ug/UREG.htm#12

Furthermore, the University's Senate has affirmed the right of any instructor to require that student papers be submitted in both written and computer readable format, and to submit any paper to a check such as that performed by Turnitin.com. As a student in this class, you are to keep an electronic copy of any paper you submit, and the course instructor may require you to submit that electronic copy on demand. Copies of student papers checked by this process will be retained by TurnitIn.com.

Finally: If you suspect cheating by colleagues or lapses in standards by a professor, you may use the confidential email: managementAIO@dal.ca, which is read only by the Dean of Management.

APPENDIX B

GRAPHING AN EQUATION

Example: the cost of pizza based on the number of toppings, where a plain pizza with no toppings is priced at $7. As you add each new topping, the cost goes up by 75 cents. An equation that relates the total price of a pizza to the number of toppings on the pizza could be y = 7.00 + .75x. Now let's look at how you can draw a graph that illustrates this relationship.

So, what do we do first? The first step in the process is to generate a list of points to graph. You do this by selecting several values for the x coordinate. It might be good to make sure you find three points to graph. Once you have selected three values for x, use the equation to calculate their corresponding y values. It might be easier to display your results in a table, as we've done below.

In the pizza example, the equation is y = 7.00 + .75x. It may be helpful to look at the equation at this point and remember that a typical equation is written in the form

$$y = a + bx$$

where a is the y-intercept and b is the slope. So, in a graph, the line representing this equation would begin at 7 on the y-axis. It will then increase in increments by 0.75 (the slope).

In order to plot the line, you first need to select some values of x. You then substitute these values into the equation and solve for their corresponding y values. Your list of points may be kept in a table like the one below.

For our pizza example, the table may start out this way:

x Number of Toppings	y Final Cost
0	7.00
1	7.75
2	
3	
4	

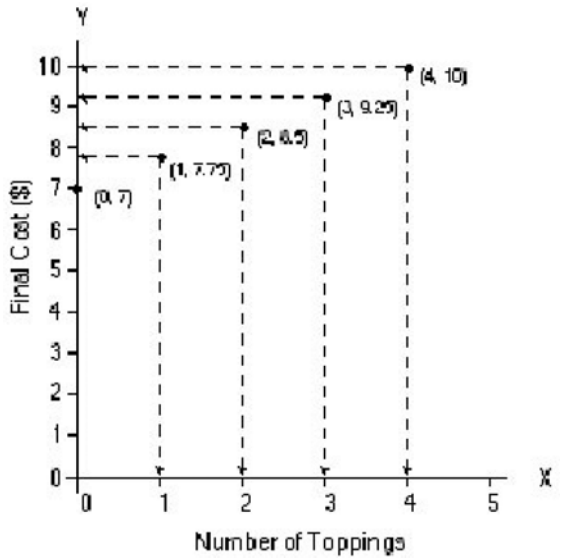
In the table below, for each given x-value you can see the calculation of the y-value.

		x Number of Toppings	y Final Cost
Let $x = 0$:	$y = 7.00 + .75\ (0)$ $y = 7.00 + 0$ $y = 7.00$	0	7.00
Let $x = 1$:	$y = 7.00 + .75\ (1)$ $y = 7.00 + .75$ $y = 7.75$	1	7.75
Let $x = 2$:	$y = 7.00 + .75\ (2)$ $y = 7.00 + 1.50$ $y = 8.50$	2	8.50
Let $x = 3$:	$y = 7.00 + .75\ (3)$ $y = 7.00 + 2.25$ $y = 9.25$	3	9.25
Let $x = 4$:	$y = 7.00 + .75\ (4)$ $y = 7.00 + 3.00$ $y = 10.00$	4	10.00

As you get more used to doing these calculations, you'll find you can skip some steps fairly easily.

After you have completed your table, you should end up with the following list of points:

(0, 7.00), (1, 7.75), (2, 8.50), (3, 9.25), (4, 10.00)



Notice they are written using the (x, y) notation. You are now ready to create the graph of these points on a set of axes.

Draw a set of axes, define the scale, then plot the points.

Once you have your list of points you are ready to plot them on a graph. The first step in drawing the graph is setting up the axes and determining the scale. The points you have to plot are: (0, 7.00), (1, 7.75), (2, 8.50), (3, 9.25), (4, 10.00)

Notice that the x-values range from 0 to 4 and the y-values go from 7 to 10. The scale of the two axes must include all the points. To the left is a set of axes drawn to do just that. Notice that the distance between the points must be equal on each axis but does not have to be the same for both axes. The x-axis goes up to 5 on this diagram, and the y-axis up to 10; the scale on each axis can be different.

Independent variable: plotted on the horizontal axis of a graph, the x-axis is commonly the independent variable. Unfortunately, in the case of economics, however, price (P), as an independent variable is normally shown on the vertical axis. It's by convention — you just have to get used to it! An independent variable is one that is unaffected by changes in the dependent variable.

Dependent variable: The dependent variable (e.g., Q or quantity) is dependent upon changes in the independent variable (price).

CALCULATING SLOPE

If you have at least two points on a line, it is possible to calculate the slope of the line. In order to do this, you use the equation

$$\frac{\Delta y}{\Delta x}=\frac{y_2-y_1}{x_2-x_1}=\frac{\text{rise}}{\text{run}}$$

Using the above example (the pizza and toppings), if you were supplied with the graph only, you would be able to calculate the slope by subbing in the points into the equation and solving.

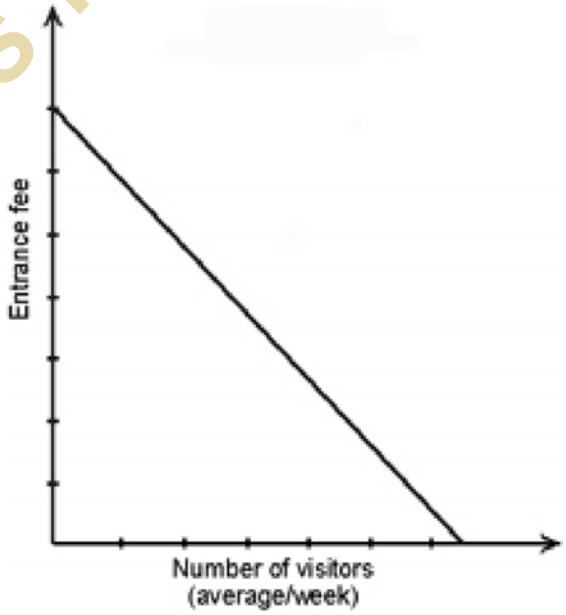
e.g., (0, 7), (4, 10)

$$\frac{\Delta y}{\Delta x}=\frac{y_2-y_1}{x_2-x_1}=\frac{10-7}{4-0}=\frac{3}{4}=0.75$$

Doing this you can see that the slope is 0.75, which is reaffirmed by looking at the equation provided earlier in the example.

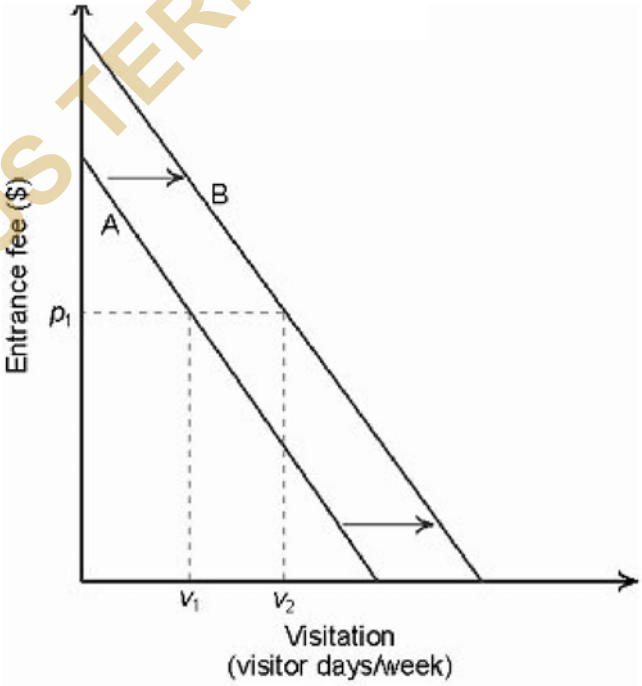
UNDERSTANDING & INTERPRETING GRAPHS

Suppose, for example, we are interested in the relationship between the entrance fee to a public park and the amount of people who visit that park. We might expect that as the entrance fee increases, the amount of visitors would decrease. This is a negative or inverse relationship, and can be seen on the graph below — which is a negatively-sloped straight line. What the curve means is that the two variables have an inverse relationship, i.e., with an increase in the independent variable, the dependent variable decreases.



As mentioned above, a graph depicts the relationship between the variables indicated on the axes. Of course, there are normally other variables that affect the typical dependent variable. Thinking back to the park visitation function, for example, we know that other things besides the entrance fee affect visit rates: for example, weather, or changes in transportation costs (say, a new road). All of these other factors are assumed to be constant when we move up and down a particular function involving entrance fee and visitation. However, these other variables can play a role by causing shifts in the existing curve/relationship between entrance fees and the number of visitors.

Consider the graph below. It shows the relationship between the entrance fee and visitation at a public park. Function A is the original relationship. According to this, for example, an entrance fee of P_1 would lead to a visitation rate of V_1. Now suppose there is a change in another variable affecting visitation, for example, the weather (e.g., it is a sunny day). In effect, this will increase the likelihood of visitors to the park. But weather is not one of the variables on the two axes of the graph, instead, what the weather variable does is cause the whole entrance fee/visitation function to shift to the right (outwards) because it means with nice weather, more people will visit the park at every fee level. The new relationship between our graphed variables is labeled B, and it lies to the right of the old relationship. Now an entrance fee of P1, for example, will lead to a visitation of V2, which is higher than the old one.



MANIPULATING EQUATIONS

In certain situations, in order to graph equations (e.g., supply and demand curves), and solve for an equilibrium point (equilibrium P & Q), you need to set the equations equal to Q_S (for the supply equation) and Q_D (for the demand curve). See below for an example. In doing this, it is important to remember you are trying to isolate the Q, and whatever you do to one side of the equation you must do to the other side.

$P = 1/5\ Q_S — 8$ (supply equation)

$P = 40 — 1/5\ Q_D$ (demand equation)

$P = 1/5\ Q_S — 8$ (supply equation)

$P + 8 = 1/5\ Q_S — 8 + 8$ - in this part we are trying to get rid of 8 on the right side of the equation in order to isolate Q. We do this by adding 8 to the negative 8, giving 0. However we must do the same to the other side of the equation, leaving us with the following:

$P + 8 = 1/5\ Q_S$

$5(P) + 5(8) = 5(1/5Q_S)$ - Because there is a fraction before the Qs we can multiply by the denominator to make it equal to 1, so in this case we must multiply all numbers on both sides of the equation by 5. By doing this we end up with:

$$\frac{5P}{-1} - \frac{200}{-1} - \frac{1Q_D}{-1}$$

$5P + 40 = 1Q_S$, which is the same as $5P + 40 = Q_S$ so we are finished and now have an equation for the supply curve

Moving on to the demand equation, we will do more or less the same thing:

$P = 40 — 1/5\ Q_D$ (demand equation)

$P — 40 = 40 - 40 - 1/5\ Q_D$

$P — 40 = -1/5\ Q_D$

$5(P) — 5(40) = 5(-1/5\ Q_D)$

$5P — 200 = -1\ Q_D$ - At this point in order to isolate Q_D we need to divide the entire equation

on both sides by -1 to make it a positive number.

$-5P + 200 = Q_D$ Rewriting this equation, it can be written as $Q_D = 200 - 5P$.

At this stage, it is possible to solve for the equilibrium quantity and price. Remember that the equilibrium quantity and price is the point at which the supply and demand curves intersect each other. This means that it is the amount that people want at a certain price, and the amount producers are willing to supply at this price. Knowing this, we can set the two equations equal to one another, and solve for P and Q. Remember that you can ONLY do this once you have manipulated the equations to be equal to Q_S and Q_D.

$Q_S = 5P + 40$
$Q_D = 200 - 5P$
$Q_S = Q_D$
$5P + 40 = 200 - 5P$
$5P + 40 - 40 = 200 - 40 - 5P$
$5P = 160 - 5P$
$5P + 5P = 160 — 5P + 5P$

$$\frac{10P}{10} = \frac{160}{10}$$

$$P = 16$$

At this point we can put P back into the original equation for either Q_S or Q_D to solve for Q. Remember you can use either equation because at the equilibrium point, the quantity demanded and supplied will be the same. See below.

$Q_S = 5P + 40$	$Q_D = 200 - 5P$
$Q_S = 5(16) + 40$	$Q_D = 200 - 5(16)$
$Q_S = 80 + 40$	$Q_D = 200 - 80$
$Q_S = 120$	$Q_D = 120$

Finally, it is ALWAYS a good idea to check to see if you've done this right. The original equations were:

$P = 1/5\ Q_S — 8$ (supply equation)

$P = 40 — 1/5\ Q_D$ (demand equation)

Our answers are P =16 and Q = 120. Do they work?

Supply equation:	16 = 1/5 (120) — 8 = 24 — 8 = 16	**yes!**
Demand equation:	16 = 40 — 1/5 (120) = 40 — 24= 16	**yes!**

If you want more practice solving these equations, a quick google search will serve up loads of examples to try.

There are also other ways of tackling simultaneous equations besides this one. Stick with what works for you!

APPENDIX C

USEFUL RESOURCES

Throughout the course, you may find it helpful to refer to external sources which provide information on economic concepts and current events. The following suggested list contains links which you might find informative and useful when completing assignments.

Bank of Canada: http://www.bankofcanada.ca/
Canadian Centre for Policy Alternatives: http:// www.policyalternatives.ca
C.D. Howe Institute: http://www.cdhowe.org/
Competition Bureau: http://www.competitionbureau.gc.ca/
Conference Board of Canada: http://www.conferenceboard.ca/
Finance Canada: http://www.fin.gc.ca/ Industry Canada: http://www.ic.gc.ca/
Montreal Economic Institute: http://www.iedm.org/
Organisation for Economic Co-operation and Development (OECD): http://www.oecd.org/

USING THE DALHOUSIE LIBRARIES WEB SITE TO RETRIEVE ARTICLES

The articles referred to in the Lesson Notes can be retrieved through the Dalhousie Libraries Web site using the following steps:

1. Load the Dalhousie Libraries home page (http://www.library.dal.ca/)
2. Click on "Journals".
3. In the search field, type the name of the journal from the citation in the Lesson Notes (for example, *Canadian Business*). Click "Search".
4. Click on the journal title.
5. Enter the required information (year, volume, issue, start page), which can be found in the citation in the Lesson Notes, and click "Go".
6. Download the article by clicking on the PDF icon or "HTML Full Text" (note that some articles are available in PDF format whereas others are only viewable as HTML).