

St. Lawrence University  
Economics 251 A & B  
MWF 9:40 & 10:50 a.m.

Dr. Robert A. Blewett  
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## INTERMEDIATE MICROECONOMIC THEORY Fall 2009

### Course Description

This course expands upon basic models of supply and demand, consumer theory, the theory of the firm and production, and theories of market behavior learned in *Introduction to Economics* (Economics 100), examining the role of prices in the allocation of resources as well as the effects of changes in policy on economic choices.

### Prerequisites

Economics 100 *or* 101. No first-year students may take this course.

### Required Materials

Robert Pindyck & Daniel Rubinfeld, *Microeconomics*, 7<sup>th</sup> Edition, Prentice Hall, 2009. An electronic version of this text is available (180-day subscription). However, a more cost-effective option is the 6<sup>th</sup> Edition (Prentice Hall, 2004) of the same text. There are very few, relatively minor improvements in the newer edition and used copies of the 6<sup>th</sup> Edition are available online. [The Study Guide is quite *optional*.]

Subscription to the on-line learning program by *Aplia* is also required. Instructions for registration and payment are available at the end of this syllabus.

Dominick Salvatore, *Schaum's Outline of Microeconomics*, 4<sup>th</sup> Edition, McGraw-Hill, 2006.

### Office Hours

Posted office hours are Mondays through Thursdays 3:15 to 4:00 p.m. However, I am usually around campus other afternoons during the week. Please feel free to stop by anytime for help, advice, or just to talk. If I happen to be out please leave your telephone number and I will try to contact you.

### Grading

A pass/fail grade option is *not* available for this course. Final course grades are based on the following weights:

Tests	40%	Aplia Assignments	20%
Post-Test Assignments	15%	Final Examination	25%

A 100-point grading scale will be used to determine final course grades with a passing score being 60 and above. The 100-point scale will be converted to the Registrar's four-point grade scale with 95 and above being a 4.0. Other grades with their minimum points:

3.75: 90	3.5: 86	3.25: 83	3.0: 80
2.75: 78	2.5: 75	2.25: 73	2.0: 70
1.75: 68	1.5: 65	1.25: 63	1.0: 60

### Course Policies

*Tests.* The best two (2) of three (3) tests determine 40% of the final course grade. Each of these tests is one class period long. If a student misses a test, *for any reason whatsoever*, that test will be the test dropped. Tests may not be taken late but students can arrange to take a test early. Students should check the schedule on the last page of this syllabus to see if they have any conflicts. Any problems are to be brought to the instructor's attention during the first week of classes.

*Post-Test Essay Assignments* are due one week after each test is returned in class. The assignment will involve a short essay for each question missed on the test. The essay should clearly explain the correct answer and why the answer selected was incorrect (*not why* you selected an incorrect answer). Each short essay will be graded separately with the average grade used for your score. Some students scoring sufficiently high on the test will be excused from its corresponding assignment and receive a 100. Students who miss a test will be assigned questions for essays. Late assignments will be penalized. These three assignments determine 15% of the final course grade.

*Aplia.* Students are required to register for this course on *Aplia.com* (see the last page for instructions). Since the analytical nature of economics makes active learning and practice essential, *Aplia* assignments will be given regularly during the semester and used to determine 20% of the final course grade. The *Aplia* website enforces hard deadlines on assignments. Missed graded assignments receive a zero. *No excuses are allowed.* However, a *free pass* on *Aplia* is given for the preparation for and participation in an online experiment (three experiments are scheduled). That is, up to three graded assignments may be missed or dropped without penalty. Any and every problem with meeting deadlines will be handled by using *free passes*.

*The Final Examination* is comprehensive and determines 25% of the final course grade. Attendance is required.

#### *Other Course Policies.*

- (a) Students are responsible for announcements and other information presented on this course's *Aplia* web pages as well as for notices sent to their campus email address.
- (b) Class attendance is not required but is recorded. Students missing class are responsible for all material covered.
- (c) Cell phones, pagers, i-pods, and other electronic devices are to be turned off during class and exams.
- (d) Non-programmable calculators may be used during tests but may not be shared with other students.
- (e) Students having trouble staying awake during class are free to stand at the back of the room.
- (f) Special Needs students should submit IEAP's before the end of the second week of classes.
- (g) Borderline final course grades are resolved on the basis of factors such as performance on the comprehensive final exam, class attendance, improvement during the course, class participation, and attitude toward learning.

## Tentative Course Outline/Readings/Problems/Learning Objectives

P&R refers to our textbook (skip sections with \*) and SOS refers to the *Schaum Outline Series*.

### I. Introduction

#### A. Course Policies and Other Preliminaries

*Readings:* P&R Ch. 1; SOS Ch. 1 (skim).

*Student Learning Objectives.* The student will be able to:

1. Discuss the characteristics of a model.
2. Discuss the evaluation of a model.
3. Give examples of partial and general equilibrium analysis.
4. Give examples of comparative statics and dynamics.
5. Give examples of positive and normative statements.
6. Define slope as used in graphical analysis.
7. Calculate the slope of straight lines and approximate the slope of curvilinear relationships.
8. Distinguish between direct (positive) and inverse (negative) relationships.
9. Explain scarcity and outline its significance in economics.
10. Define and give examples of economic goods and free goods.
11. Define and give examples of opportunity cost.

#### B. Supply and Demand

*Readings:* P&R Ch. 2 (skip 2.6); SOS Ch. 2: 2.1-2.9; SOS Ch. 3: 3.1-3.3.

*Problems:* SOS Ch. 2: 2.6, 2.10, 2.12, 2.15-2.17, 2.18a, 2.25-2.28; SOS Ch. 3: 3.1-3.4, 3.6, 3.7, 3.10, 3.11.

*Student Learning Objectives.* The student will be able to:

1. Explain what is meant by market equilibrium and market disequilibrium.
2. Describe conditions leading to a shortage and a surplus, as well as explain how market forces bring a free market back to equilibrium.
3. Explain and give examples of substitutes and complements.
4. List the determinants of demand for a typical consumer good and illustrate the impact of each on demand, market price and quantity exchanged.
5. List the determinants of supply for a typical good and illustrate the impact of a change in each on supply, market price and quantity exchanged.
6. Explain how price acts as a rationing device in a market system.
7. Apply an understanding of supply and demand to "real world" examples.
8. Explain possible causes for a change in equilibrium price and quantity.
9. Understand and show the effects of taxes and price controls on price and quantity exchanged.
10. Understand and show the effects of taxes and price controls on buyers and sellers.
11. Understand and show the effects of price supports and subsidies on prices and quantities.
12. Understand and show the effects of price supports and subsidies on buyers and sellers.
13. Give possible reasons for changes in market prices and/or quantities sold.
14. Explain the concept of elasticity.
15. Compute elasticities when given data or a graph using the arc or point method.
16. Explain what is meant by "price-elastic," "price-inelastic," and "unitary elastic" as well as the economic significance of each.
17. Explain and apply the relationships among price-elasticities, percentage change in price, the percentage change in quantity and approximate change in total revenues.
18. Apply the concept of elasticity to "real world" problems.

### II. Consumer Behavior

#### A. Indifference Curves and Choice

*Readings:* P&R Ch. 3 (skip 3.6); SOS Ch.4: 4.3-4.8.

*Problems:* SOS Ch. 4: 4.11-4.18, 4.20-4.21,4.23.

*Student Learning Objectives.* The student will be able to:

1. Define indifference curve and indifference map.
2. List and explain the four assumptions of "normal" indifference curves and their implications for the shape of the curve and maps.
3. Explain the implications of alternative assumptions with respect to indifference maps and vice versa.
4. Explain why a consumer is indifferent at different points on an indifference curve.
5. Explain and calculate the marginal rate of substitution as well as its implications.
6. Define and construct a budget constraint both algebraically and graphically.
7. Explain consumer optimum as well as its equilibrium conditions.
8. Show and explain the impacts of a change in the price of one good and/or income on the budget constraint and consumer equilibrium.
9. Show and explain the impact of a change in consumer preferences with respect to indifference maps and consumer equilibrium.
10. Apply indifference curve analysis to "real world" problems including food stamps, public education, investment tax preferences and the effects of social security on savings.

## B. Demand

*Readings:* P&R Ch. 4 (skip 4.6); SOS Ch. 4: 5.7-5.9; SOS Ch. 3: 3.4-3.6.

*Problems* SOS Ch. 4: 4.28-4.33, 4.35, 4.39; SOS Ch. 3: 3.14-3.19, 3.23.

*Student Learning Objectives.* The student will be able to:

1. Derive and income consumption curve (ICC) and an Engel curve.
2. Define inferior and normal goods and relate them to the ICC and Engel curve.
3. Explain the relationship between the ICC and the income-elasticity of demand.
4. Derive a price consumption curve (PCC) and an individual demand curve.
5. Explain the relationship between the PCC and the price-elasticity of demand.
6. Clearly show and explain the income and substitution effects of a price change.
7. Relate the income and price elasticities of demand to a graph showing the income-substitution effects of a price change.
8. Relate the income and substitution effects to real world examples and policy choices.
9. Define and explain consumer's surplus.
10. Show and explain the changes in consumer surplus for various types of changes in equilibrium (e.g. changes in prices, taxes, price controls, etc.)
11. Calculate income-elasticity from an Engel curve.
12. Define luxury, necessity and inferior goods and relate to income elasticity of demand.
13. Explain the relationship between substitutes and complements, and the cross-elasticity of demand.
14. Apply demand theory to real world problems/cases.
15. Calculate price elasticity of supply from a curve or from given data.
16. Calculate and/or use various elasticities if given data.
17. Apply consumer theory to consumer choices over time.
18. Show and explain the effects of a change in income, wages, or interest rates on consumer choice.

## III. Production, Cost and Competitive Markets

### A. Production

*Readings:* P&R Ch. 6; SOS Ch. 6: 6.1, 6.2, 6.4-6.9, 6.11.

*Problems* SOS Ch. 6: 6.1-6.3, 6.10, 6.12, 6.15-18, 6.23-6.26.

*Student Learning Objectives.* The student will be able to:

1. State the assumptions used in production theory.
2. Explain the relationship among TP, AP, and MP.
3. Derive TP, AP and/or MP from numerical examples.
4. Geometrically derive AP and MP from TP and explain the relationships among the curves.
5. Explain the difference in production theory occasioned by introduction of more than one variable factor of production.
6. Explain the construction of an isoquant and the conceptual difference between it and an indifference curve.

7. Explain and calculate the marginal rate of technical substitution as well as its implications.
8. Derive and explain ridge lines as well as explain their economic implications.
9. Derive an expansion path and explain its economic significance.
10. Show and explain increasing, decreasing, and constant returns to scale using isoquant maps.
11. Show the derivation of TP from isoquant maps.

## B. Costs of Production

*Readings:* P&R Ch. 7 (skip 7.6, 7.7); SOS Ch. 7: 7.1-7.7.

*Problems* SOS Ch. 7: 7.1-7.16, 7.20-7.24.

*Student Learning Objectives.* The student will be able to:

1. Show the effects on factor mix and the expansion path of a change in factor price.
2. Be able to apply production theory to real world cases and examples. Explain the shape of isoquant curves and maps in terms of the underlying assumptions.
3. Construct an isocost curve, both algebraically and graphically.
4. Explain why an isocost curve is not a constraint.
5. Explain and show producer equilibrium and its conditions.
6. Explain how producer equilibrium shows a combination of factors which maximize output given a set total outlay or minimizes cost given a desired output.
7. Show the effects on factor mix and the expansion path of a change in factor price.
8. Be able to apply production theory to real world cases and examples. Explain the shape of isoquant curves and maps in terms of the underlying assumptions.
9. Construct an isocost curve, both algebraically and graphically.
10. Explain why an isocost curve is not a constraint.
11. Explain and show producer equilibrium and its conditions.
12. Explain how producer equilibrium shows a combination of factors which maximize output given a set total outlay or minimizes cost given a desired output.
13. Explain the difference between the short run and the long run.
14. Construct one diagram depicting TC, TVC, and TFC and another depicting ATC, AFC, AVC, and MC.
15. Explain the relationships among the various costs.
16. Show and explain the geometric derivation of AC, AVC, AFC, and MC.
17. Explain and show the relationships among product and cost curves.
18. Explain why a "marginal" curve must cross an "average" curve at its maximum or minimum point.
19. Explain the conceptual difference between short run and long run costs.
20. Show how the long run curves are derived and explain why they have the shape depicted.
21. Show and explain the relationship between short run and long run cost curves.
22. Show and explain the derivation of cost curves from isoquant/isocost maps.
23. Explain the relationship between returns to scale and economies/diseconomies of scale.
24. Explain why it may be reasonable to assume the various shapes of cost curves.
25. List and explain the essential assumptions for the cost curves.

## C. Competitive Supply

*Readings:* P&R Ch. 8; SOS Ch. 8: 8.1-8.10.

*Problems* SOS Ch. 8: 8.1-8.5, 8.7-8.20, 8.23-8.25.

*Student Learning Objectives.* The student will be able to:

1. Define normal profits, accounting profits and economic profits and differentiate among them.
2. Differentiate between the definitions of competition as used in economics and as it is generally used.
3. Differentiate between a firm and an industry.
4. List the characteristics of a perfectly competitive market.
5. Explain why a perfectly competitive firm is a "price-taker" and how this determines the demand curve faced by an individual firm.
6. Construct a graph showing the profit maximizing output, revenue, costs, and profits using the total approach.

7. Explain the shape of the TR, MR, and AR curves and their relationship to price.
8. Using per-unit cost curves and a given price, explain and show using a graph the profit-maximizing output, AC, AVC, MC, TC, TVC, TR, total profit/loss and average (per unit) profit/loss.
9. Explain the profit maximizing conditions for a firm and why loss minimization and profit maximization are derived in the same manner.
10. Explain and graphically depict the break-even point(s) and shut-down point.
11. Explain why a firm may continue to operate in the short run at a loss.
12. Demonstrate why the short run supply curve for the perfect competitor is the MC curve above its intersection with AVC curve.
13. Show and explain the derivation of the short run industry supply curve.
14. Explain how the industry demand and supply curves determine the demand curve for the individual firm.
15. Explain why output levels other than where  $MC=MR$  do not maximize profits.
16. Outline the difference between the long run and short run in a competitive industry.
17. Explain how the free entry and exit of firms will assure zero economic profits and the most efficient scale of production.
18. Explain under what conditions or circumstances industries may be increasing, decreasing or constant cost industries.
19. Show and explain the derivation of the long run supply curve for increasing, decreasing, and constant cost industries.

#### **D. Competitive Markets**

*Readings:* P&R Ch. 9.

*Student Learning Objectives.* The student will be able to:

1. Explain and show the long run and short run effects of changes (e.g. demand, technology, factor prices, taxes subsidies, price and output controls, entry restrictions) on price, revenues, profits, costs, output and the number of firms.
2. Explain and show the impacts of changes (e.g. demand, technology, factor prices, taxes subsidies, price and output controls, entry restrictions) on consumer and producer surplus.
3. Apply the competitive model to explain real world cases (as in Ch. 9 of the text).

### **IV. Market Structure and Strategy**

#### **A. Monopoly and Monopsony**

*Readings:* P&R Ch. 10; SOS Ch. 9: 9.1-9.6; SOS Ch. 13: 13.12-13.14.

*Problems* SOS Ch. 9: 9.1, 9.4, 9.5, 9.7-9.10, 9.12, 9.13, 9.16, 9.17, 9.19, 9.20; SOS Ch. 13: 13.19-13.21.

*Student Learning Objectives.* The student will be able to:

1. List the characteristics of a monopoly.
2. Explain why a monopoly firm is a "price-maker."
3. Explain the relationships among MR, AR, and TR.
4. Derive AR and MR from TR both numerically and geometrically
5. Explain the relationship between the demand curve and AR curve.
6. Explain and show the geometric derivation of the MR curve from the AR curve.
7. Explain and show the relationship between MR and the price elasticity of demand.
8. Using the "total approach" show and explain the profit maximizing level of output, price and profits. Be able to do so by constructing a graph or using a numerical example.
9. Using the "marginal approach," show and explain the profit maximizing level of output, price, TC, AC, TVC, AVC, MC, TR, total profit/loss, average profit/loss. Be able to do so by constructing a graph or using a numerical example.
10. Explain why  $MR=MC$  is the profit-maximizing condition.
11. Show and explain the impacts on the monopolist's revenues, costs and profits of a change in demand, factor prices, technology, taxes/subsidies, output restrictions and price controls.
12. Explain and show the long run profit maximizing equilibrium under monopoly.
13. Compare the appropriate scale of plant of a monopolist with that of perfect competitor.
14. Define monopsony and marginal factor cost.

15. List and explain the conditions that could give rise to monopsony power.
16. Explain and derive the profit maximizing conditions for a monopsonist.
17. Compare and contrast the profit maximizing conditions for a monopsonist with those of a perfect competitor in the factor market.
18. Show and explain determination of a monopsonist's factor use and factor price using a graph or numerical example.
19. Apply monopsony theory to real world examples.

## **B. Pricing Strategy**

*Readings:* P&R Ch. 11 (skip 11.5, 11.6), SOS Ch. 9: 9.9.

*Problems* SOS Ch. 9: 9.21-9.27.

*Student Learning Objectives.* The student will be able to:

1. List and explain the conditions necessary for price discrimination.
2. Define and differentiate among the three types of price discrimination.
3. Explain and show the profit maximizing outputs, costs and revenues for a third-degree price discriminator of a change in demand, factor prices, technology, taxes/subsidies, and output restrictions.
4. Explain and show the reduction in consumer surplus and the increase in profits which occur when a monopolist is able to successfully price discriminate.
5. Give real world examples of price discrimination and monopoly.
6. Apply price discrimination theory to real world examples.
7. Define and explain a two-part tariff.
8. Show and explain the effects of a two part tariff on prices, quantity, profits as well as on consumer and producer surplus.
9. Apply the theory of two-part tariff to real world examples.

## **C. Monopolistic Competition and Oligopoly**

*Readings:* P&R Ch. 12; SOS Ch. 10: 10.1-10.4; 10.8-10.9, 10.12.

*Problems* SOS Ch. 10: 10.1-10.2, 10.4-10.7, 10.9, 10.15-10.16, 10.22-10.23.

*Student Learning Objectives.* The student will be able to:

1. Define barriers to entry, cartel, kinked demand model, monopolistic competition, oligopoly, price leadership.
2. List the assumptions and characteristics of monopolistic competition and oligopoly.
3. Explain how oligopoly and monopolistic competition differ from each other and from perfect competition and pure monopoly.
4. Give examples of industries or markets that "fit" our models of oligopoly and monopolistic competition.
5. Show and explain the long run and short run equilibrium of a monopolistic competitor.
6. Relate the implications of the monopolistic competitive firm to real world firms.
7. Differentiate among different types of oligopolies.
8. Explain the basic instability of cartels and what factors affect the relative instability of cartels.
9. Show and explain why oligopoly prices tend to be stable or "sticky" even in the face of some changes in demand or costs.
10. Explain how barriers to entry are necessary for an effective cartel in the long run.
11. Define product differentiation and give examples.
12. Explain how advertising may lead to lower prices.

## **D. Game Theory and Strategic Behavior**

*Readings:* P&R Ch. 13 (7<sup>th</sup>: pp. 479-486, 490-494, 503-504; 6<sup>th</sup>: pp. 473-479, 484-488, 497-498); SOS Ch. 12: 12.1-12.7.

*Problems* SOS Ch. 12: 12.1, 12.3, 12.6-12.9, 12.11-12.14, 12.16, 12.19

*Student Learning Objectives.* The student will be able to:

1. Define a game, a cooperative game, and a non-cooperative game.
2. Define a dominant strategy. Explain why equilibrium is stable in dominant strategies.

3. Define Nash equilibrium.
4. Explain a prisoner's dilemma and relate it to a Nash equilibrium and dominant strategy.
5. Explain a "tit-for-tat" strategy. Why is a tit-for-tat strategy rational for an infinitely repeated prisoner's dilemma?
6. Explain why a tit-for-tat strategy for a finitely repeated prisoner's dilemma is not optimal.
7. Explain the inherent instability of cartels or collusive arrangements.
8. Explain how stability in demand and cost conditions, the number of firms and new entry impact the stability of cartels or collusive arrangements.
9. Apply game theory and collusion to real world examples.

## V. Additional Topics

### A. Input Markets, Efficiency, and Resource Allocation

*Readings:* P&R Ch. 14; SOS Ch. 13: 13.1-13.3, 13.5, 13.6.

*Problems* SOS Ch. 13: 13.1-13.4, 13.7.

*Student Learning Objectives.* The student will be able to:

1. Define factor market, quasi rent, rent, and the marginal revenue product.
2. Explain how a firm determines how much of a factor it will hire or purchase.
3. Explain and show how the profit maximizing condition for the use of factors is equivalent to the profit maximizing conditions for output decisions.
4. Explain how the MRP curve is the factor demand curve if the firm has one variable factor.
5. Explain why the factor demand is more price inelastic if the firm is an imperfect competitor.
6. Explain how factor prices factor supply and factor demand are determined.
7. Define derived demand and explain how factor markets are tied to markets for outputs.
8. Show the effect of a change in output prices, technology, taxes/subsidies, and factor supply on resource use and factor price.
9. Explain and show the determination of rent and quasi rent.
10. Derive the profit-maximizing output condition ( $MC = MR$ ) from the profit-maximizing input condition.
11. Derive equilibrium conditions for production and explain why the marginal revenue product of a resource is the same for all producers.
12. Define market failure, transactions costs and social opportunity costs.
13. Explain why the price a producer pays for a resource represents the social opportunity cost of the resource.
14. Explain why the producer's marginal cost of a product represents the marginal social opportunity cost of the resources used to produce the product.
15. Explain why resource allocation in a system of competitive markets is socially efficient (i.e. the benefits of some other use of resources does not outweigh the losses). Explain in terms of both resources and the MC of outputs.
16. Explain why departures from competitive equilibrium lead to socially inefficient resource allocation.

### B. Asymmetric Information

*Readings:* P&R Ch. 17 (skip section 17.5); SOS Ch.15: 15.3-5.

*Problems* SOS Ch. 15: 15.8-9, 15.15-16.

*Student Learning Objectives.* The student will be able to:

1. Define asymmetric information. Distinguish between imperfect and asymmetric information.
2. Explain why asymmetric information can lead to market failure when a market is otherwise perfectly competitive.
3. Define statistical discrimination, the lemons problem, adverse selection, moral hazard, screening, and the principal-agent problem.
4. Differentiate between moral hazard and adverse selection problems.
5. Explain why a seller may find it advantageous to signal the quality of a product.
6. Define an efficiency wage and relate it to shirking.
7. Apply statistical discrimination, the lemons problem, adverse selection, moral hazard, screening, and the principal-agent problem to real world applications.

## Tentative Course Schedule

First Day of Class – Wed 26 Aug  
Last Day to Add/Drop – Thu 3 Sept  
Test #1 – Fri 25 Sept  
Post-Test #1 Assignment – Mon 5 Oct  
Fall Break – Thu 15 to Sun 18 Oct  
Test #2 – Fri 23 Oct  
Post-Test #2 Assignment – Mon 2 Nov

Last Day to W/D – Fri 6 Nov  
Test #3 – Fri 20 Nov  
Thanksgiving Break – Sat 21 to Sun 29 Nov  
Post-Test #3 Assignment – Mon 7 Dec  
Last Day of Class – Wednesday 9 Dec  
Final Exam – Tue 15 Dec @ 6 pm, H218  
Merry Christmas! – Fri 25 Dec



## Student Registration and Payment Instructions

For Economics 251 A & B, you will use the Pindyck & Rubinfeld textbook *and* Aplia's website. The website includes content that has been customized for your textbook and course. You can begin working on your homework as soon as you register!

Course Name: Blewett: Intermediate Micro, Fall 2009

Start Date: 08/27/2009

Professor: R.A. Blewett

Course Key: SGE7-AFLX-N5FJ

### Registration and Payment Instructions

1. Connect to <http://www.aplia.com>.
2. Click the System Configuration Test link below the Sign In and Register sections to make sure you can access all of the features on Aplia's website. This takes just a few seconds and tells you how to update your browser settings if necessary.
3. Return to <http://www.aplia.com>.
  - If you have never used Aplia before, click the New Student button and enter your Course Key:  
SGE7-AFLX-N5FJ.  
Continue following the instructions to complete your registration.
  - If you have used Aplia before, sign in with your usual e-mail address and password and enter your Course Key when prompted:  
SGE7-AFLX-N5FJ  
If you are not prompted for a new Course Key, click the **Enter Course Key** button to enroll in a new Aplia course. Enter your Course Key when you are prompted.
4. Purchase access to your course directly from the Aplia website for \$35.00 USD. If you understand your payment options, pay now. Otherwise, postpone your purchase decision by choosing the option to pay later. Your payment grace period ends at the end of the day on Wednesday 16 September 2009.