PLANNED INSTRUCTION

A PLANNED COURSE FOR:

AP Micro & Macroeconomics

Curriculum writing committee:

Michael Murray

Grade Level: 11th & 12th

Date of Board Approval: 2023

COURSE WEIGHTING

Chapter Tests	**100 points**
Homework/Classwork	**25 points**
Quizzes	**25 points**
Total (approximately)	**600-700 per/Q**

Course Description:

AP Microeconomics

The focus of the microeconomic section of this course is to give students a thorough understanding of the principles of economics that apply to the function of individual decision makers, both consumers and producers, within the economic system. It places primary emphasis on the nature and function of the product markets and includes the study of factor markets and of the role of government in promoting greater efficiency and equity in the economy.

AP Macroeconomics

The purpose of the macroeconomic section is to give students an understanding of the economic system. This section places particular emphasis on the study of national income and price-level determination, and develops students' familiarity with economic performance measures, the financial sector, stabilization policies, economic growth, and international economics.

Time/Credit for the Course: 1 full year course/ 1 credit

Curriculum Map

Overview:

1st Marking Period – 45 Days

Unit 1 Basic Economic Concepts (Microeconomics and Macroeconomics curriculum) - Pgs. 34-40 and 34-39 respectively of the College Board Course Framework (Approx. 12 days)

Microeconomics:

1.1 Scarcity
1.2 Resource Allocation and Economic Systems
1.3 Production Possibilities Curve
1.4 Comparative Advantage and Trade
1.5 Cost-Benefit Analysis
1.6 Marginal Analysis and Consumer Choice

Macroeconomics:

1.2 Opportunity Cost and the Production Possibilities Curve (PRC)
1.3 Comparative Advantage and Gains from Trade
1.6 Market Equilibrium, Disequilibrium, and Changes in Equilibrium

Unit 2 Microeconomics: Supply and Demand - Pgs. 46-56 of the College Board Course Framework (Approx. 15 days)

2.1 Demand
2.2 Supply
2.3 Price Elasticity of Demand
2.4 Price Elasticity of Supply
2.5 Other Elasticities
2.6 Market Equilibrium and Consumer and Producer Surplus
2.7 Market Disequilibrium and Changes in Equilibrium
2.8 The Effects of Government Intervention in Markets
2.9 International Trade and Public Policy

Unit 3 Microeconomics: Production, Cost, and the Perfect Competition Model - Pgs. 62-69 of the College Board Course Framework (Approx. 10 days)

3.1 The Production Function
3.2 Short-Run Production Costs
3.3 Long-Run Production Costs
3.4 Types of Profit
3.5 Profit Maximization
3.6 Firms' Short-Run Decisions to Produce and Long-Run Decisions to Enter or Exit a Market
3.7 Perfect Competition

Unit 4 Microeconomics: Imperfect Competition - Pgs. 76-81 of the College Board Course Framework (Approx. 8 days)

4.1 Introduction to Imperfectly Competitive Markets
4.2 Monopoly
4.3 Price Discrimination
4.5 Oligopoly and Game Theory

2nd Marking Period: 45 Days

Unit 5 Microeconomics: Factor Markets - Pgs. 88-92 of the College Board Course Framework (Approx. 22 days)

5.1 Introduction to Factor Markets
5.2 Changes in Factor Demand and Factor Supply
5.3 Profit-Maximizing Behavior in Perfectly Competitive Factor Markets
5.4 Monopolistic Markets

Unit 6 Microeconomics: Market Failure and the Role of Government - Pgs. 98-104 of the College Board Course Framework (Approx. 23 days)

6.1 Social Efficient and Inefficient Market Outcomes
6.2 Externalities
6.3 Public and Private Goods
6.4 The Effects of Government Intervention in Different Market Structures
6.5 Inequality

3rd Marking Period: 45 Days

Unit 2 Macroeconomics: Economic Indicators and the Business Cycle - Pgs. 46-53 of the College Board Course Framework (Approx. 9 days)

2.1 The Circular Flow and GDP
2.2 Limitations of GDP
2.3 Unemployment
2.4 Price Indices and Inflation
2.5 Costs and Inflation
2.6 Real v. Nominal GDP
2.7 Business Cycles

Unit 3 Macroeconomics: National Income and Price Determination - Pgs. 60-69 of the College Board Course Framework (Approx. 12 days)

3.1 Aggregate Demand (AD)
3.2 Multipliers
3.3 Short-Run Aggregate Supply (SRAS)
3.4 Long-Run Aggregate Supply (LRAS)
3.5 Equilibrium in the Aggregate Demand-Aggregate Supply (AD-AS) Model

3.6 Changes in the AD-AS Model in the Short Run
3.7 Long-Run Self-Adjustment
3.8 Fiscal Policy
3.9 Automatic Stabilizers

Unit 4 Macroeconomics: Financial Sector - Pgs. 76-85 of the College Board Course Framework (Approx. 9 days)

4.1 Financial Assets
4.2 Nominal v. Real Interest Rates
4.3 Definition, Measurement, and Functions of Money
4.4 Banking and the Expansion of the Money Supply
4.5 The Money Market
4.6 Monetary Policy
4.7 The Loanable Funds Market

Unit 5 Macroeconomics: Long-Run Consequences of Stabilization Policies - Pgs. 92-100 of the College Board Course Framework (Approx. 8 days)

5.1 Fiscal and Monetary Policy Actions in the Short Run
5.2 The Phillips Curve
5.3 Money Growth and Inflation
5.4 Government Deficits and the National Debt
5.5 Crowding Out
5.6 Economic Growth
5.7 Public Policy and Economic Growth

Unit 6 Macroeconomics: Open Economy-International Trade and Finance - Pgs. 106-112 of the College Board Course Framework (Approx. 7 days)

6.1 Balance of Payments Accounts
6.2 Exchange Rates
6.3 The Foreign Exchange Market
6.4 Effect of Changes in Policies and Economic Conditions on the Foreign Exchange Market
6.5 Changes in the Foreign Exchange Market and Net Exports
6.6 Real Interest Rates and International Capital Flows

4th Marking Period: 45 Days

Review Process for AP Exam (Approx. 20 days)

1. Students will be tested on past AP Micro & Macroeconomics exams.
2. This will include tests consisting of 60 Multiple Choice and 3 FRQ questions.
3. Students will self-assess (under instructor supervision) to gain understanding of AP Readers'

expectations.

4. Students will repeat the process for both Micro & Macro exams.
5. Students will choose which exams they wish to focus more attention on in review.
6. Students will hypothesize on what the FRQ topics will be.

Research Economic Project (Approx. 25 days)

1. Pending instructor approval, students will choose an economic topic of their own volition.
2. Students will research the topic.
3. Students will create a presentation using the principles garnered throughout the course.
4. Students will present and defend their findings before the class.

Big Ideas- *Located in the College Board Curriculum pg. 19 in each curriculum.*

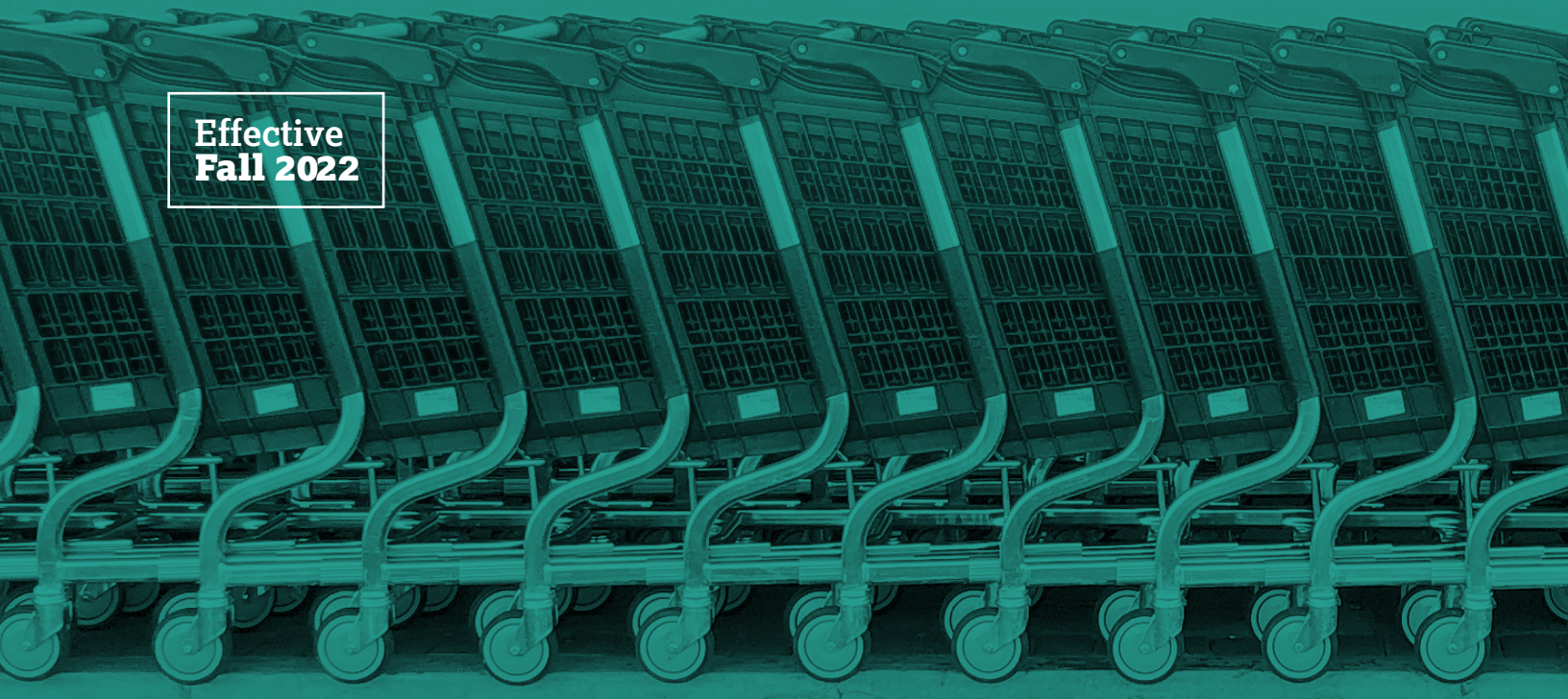
CollegeBoard AP

INCLUDES

- ✓ Course framework
- ✓ Instructional section
- ✓ Sample exam questions
- ✓ Classroom poster

AP® Microeconomics

COURSE AND EXAM DESCRIPTION



Effective
Fall 2022

AP® Microeconomics

COURSE AND EXAM DESCRIPTION

Effective
Fall 2022

AP COURSE AND EXAM DESCRIPTIONS ARE UPDATED PERIODICALLY
Please visit AP Central (apcentral.collegeboard.org) to determine whether a more recent course and exam description is available.

AP MICROECONOMICS

Course Framework

Introduction

The AP Microeconomics course outlined in this framework reflects a commitment to what economics teachers, professors, and researchers have agreed is the main goal of a college-level microeconomics course: to introduce students to the principles that apply to individual economic decision-makers.

The *AP Microeconomics Course and Exam Description* defines concepts, skills, and understandings required by representative colleges and universities for granting college credit and placement. The course prepares students to think like economists by using principles and models to describe economic situations and predict and explain outcomes. Like economists, students do so by using graphs, charts, and data.

Although the course framework is designed to provide a clear and detailed description of the course content and skills, it is not a curriculum. A college-level textbook that covers the required course content should be used, and teachers create their own curricula to meet the needs of their students and any state or local requirements.

Course Framework Components

Overview

This course framework provides a clear and detailed description of the course requirements necessary for student success.

The course framework includes two essential components:

1 COURSE SKILLS

The course skills are central to the study and practice of economics. Help students develop and apply the described skills on a regular basis over the span of the course.

2 COURSE CONTENT

The course content is organized into commonly taught units of study that provide a suggested sequence for the course. These units comprise the content and conceptual understandings that colleges and universities typically expect students to master to qualify for college credit and/or placement. This content is grounded in big ideas, which are cross-cutting concepts that build conceptual understanding and spiral throughout the course.

1

AP MICROECONOMICS

Course Skills

The AP Economics skills describe what a student should be able to do while exploring course concepts. The table that follows presents these skills, which students should develop during the AP Microeconomics and AP Macroeconomics courses. These skills form the basis of the tasks on the AP Exam.

The unit guides later in this publication embed and spiral these skills throughout the course, providing teachers with one way to integrate the skills in the course content with sufficient repetition to prepare students to transfer those skills when taking the AP Exam. Course content may be paired with a variety of skills on the AP Exam.

More detailed information about teaching the course skills can be found in the Instructional Approaches section of this publication.

AP MICROECONOMICS

AP Economics Skills

Skill Category 1	Skill Category 2	Skill Category 3	Skill Category 4
Principles and Models 1 Define economic principles and models.	***Interpretation*** 2 Explain given economic outcomes.	***Manipulation*** 3 Determine outcomes of specific economic situations.	***Graphing and Visuals*** 4 Model economic situations using graphs or visual representations.

SKILLS

1.A Describe economic concepts, principles, or models.	2.A Using economic concepts, principles, or models, explain how a specific economic outcome occurs or what action should be taken in order to achieve a specific economic outcome.	3.A Determine the outcome of an economic situation using economic concepts, principles, or models.	4.A Draw an accurately labeled graph or visual to represent an economic model or market.
1.B Identify an economic concept, principle, or model illustrated by an example.	2.B Using economic concepts, principles, or models, explain how a specific economic outcome occurs when there are multiple contributing variables or what multiple actions should be taken in order to achieve a specific economic outcome.	3.B Determine the effect(s) of one or more changes on other economic markets.	4.B Demonstrate your understanding of a specific economic situation on an accurately labeled graph or visual.
1.C Identify an economic concept, principle, or model using quantitative data or calculations.	2.C Interpret a specific economic outcome using quantitative data or calculations.	3.C Determine the effect(s) of a change in an economic situation using quantitative data or calculations.	4.C Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.
1.D Describe the similarities, differences, and limitations of economic concepts, principles, or models.			

2

AP MICROECONOMICS

Course Content

Based on the Understanding by Design® (Wiggins and McTighe) model, this course framework provides a clear and detailed description of the course requirements necessary for student success. The framework specifies what students must know, be able to do, and understand, with a focus on big ideas that encompass core principles and theories of the discipline. The framework also encourages instruction that prepares students for advanced economics coursework.

Big Ideas

The big ideas serve as the foundation of the course and allow students to create meaningful connections among concepts. They are often abstract concepts or themes that become threads that run throughout the course. Revisiting the big ideas and applying them in a variety of contexts allows students to develop deeper conceptual understanding. Below are the big ideas of the course and a brief description of each:

BIG IDEA 1: SCARCITY AND MARKETS (MKT)
Limited resources and unlimited wants result in the need to make choices. In a market economy, the choices of buyers and sellers determine market prices and the allocation of scarce resources.

BIG IDEA 2: COSTS, BENEFITS, AND MARGINAL ANALYSIS (CBA)
There are trade-offs associated with any decision. Making optimal decisions requires evaluating the additional costs and benefits of possible actions.

BIG IDEA 3: PRODUCTION CHOICES AND BEHAVIOR (PRD)
Firms seek to minimize costs and maximize profits, which influences their production decisions in the short run and long run.

BIG IDEA 4: MARKET INEFFICIENCY AND PUBLIC POLICY (POL)
Private markets can fail to allocate resources efficiently, and well-designed public policy can endeavor to promote greater efficiency and equity in the economy.

UNITS

The course content is organized into commonly taught units. The units have been arranged in a logical sequence frequently found in many college courses and textbooks.

The six units in AP Microeconomics and their weighting on the multiple-choice section of the AP Exam are listed below.

Pacing recommendations at the unit level and on the Course at a Glance provide suggestions for how to teach the required course content and administer the Personal Progress Checks. The suggested class periods are based on a schedule in which the class meets five days a week for 45 minutes each day, with the assumption that there are approximately 70 instructional days per semester. While these recommendations have been made to aid planning, teachers should of course adjust the pacing based on the needs of their students, alternate schedules (e.g., block scheduling), or their school's academic calendar.

TOPICS

Each unit is broken down into teachable segments called topics. The topic pages (starting on page 34) contain the required content for each topic.

Units	Exam Weighting
Unit 1: Basic Economic Concepts	**12–15%**
Unit 2: Supply and Demand	**20–25%**
Unit 3: Production, Cost, and the Perfect Competition Model	**22–25%**
Unit 4: Imperfect Competition	**15–22%**
Unit 5: Factor Markets	**10–13%**
Unit 6: Market Failure and the Role of Government	**8–13%**

Spiraling the Big Ideas

The following table shows how the big ideas spiral across units.

Big Ideas	Unit 1 *Basic Economic Concepts*	Unit 2 *Supply and Demand*	Unit 3 *Production, Cost, and the Perfect Competition Model*	Unit 4 *Imperfect Competition*	Unit 5 *Factor Markets*	Unit 6 *Market Failure and the Role of Government*
Scarcity and Markets MKT	✓	✓				
Costs, Benefits, and Marginal Analysis CBA	✓		✓			
Production Choices and Behavior PRD			✓	✓	✓	
Market Inefficiency and Public Policy POL		✓				✓

Course at a Glance

Plan

The Course at a Glance provides a useful visual organization of the AP Microeconomics curricular components, including:

- Sequence of units, along with approximate weighting and suggested pacing. Please note, pacing is based on 45-minute class periods, meeting five days each week for a full academic semester.
- Progression of topics within each unit.
- Spiraling of the big ideas and skills across units.

Teach

SKILL CATEGORIES

Skill categories spiral throughout the course.

- 1 Principles and Models
- 2 Interpretation
- 3 Manipulation
- 4 Graphing and Visuals

BIG IDEAS

Big ideas spiral across topics and units.

- MKT Scarcity and Markets
- CBA Costs, Benefits, and Marginal Analysis
- PRD Production Choices and Behavior
- POL Market Inefficiency and Public Policy

Assess

Assign the Personal Progress Checks—either as homework or in class—for each unit. Each Personal Progress Check contains formative multiple-choice and free-response questions. The feedback from the Personal Progress Checks shows students the areas where they need to focus.

UNIT 1 Basic Economic Concepts

~9–11 Class Periods | **12–15%** AP Exam Weighting

MKT 1	1.1 Scarcity
MKT 1	1.2 Resource Allocation and Economic Systems
MKT 4	1.3 Production Possibilities Curve
MKT 1	1.4 Comparative Advantage and Trade
CBA 1	1.5 Cost-Benefit Analysis
CBA 2	1.6 Marginal Analysis and Consumer Choice

Personal Progress Check 1

Multiple-choice: ~20 questions
Free-response: 2 questions
- Short
- **Short**

UNIT 2 Supply and Demand

~13–15 Class Periods | **20–25%** AP Exam Weighting

MKT 4	2.1 Demand
MKT 4	2.2 Supply
MKT 3	2.3 Price Elasticity of Demand
MKT 3	2.4 Price Elasticity of Supply
MKT 3	2.5 Other Elasticities
MKT 2	2.6 Market Equilibrium and Consumer and Producer Surplus
MKT 3	2.7 Market Disequilibrium and Changes in Equilibrium
POL 4	2.8 The Effects of Government Intervention in Markets
POL 4	2.9 International Trade and Public Policy

Personal Progress Check 2

Multiple-choice: ~25 questions
Free-response: 2 questions
- Short
- Short

UNIT 3 Production, Cost, and the Perfect Competition Model

~11–13 Class Periods | **22–25%** AP Exam Weighting

PRD 1	3.1	The Production Function
PRD 4	3.2	Short-Run Production Costs
PRD 1	3.3	Long-Run Production Costs
CBA 1	3.4	Types of Profit
CBA 2	3.5	Profit Maximization
PRD 2	3.6	Firms' Short-Run Decisions to Produce and Long-Run Decisions to Enter or Exit a Market
PRD 4	3.7	Perfect Competition

Personal Progress Check 3

Multiple-choice: ~20 questions
Free-response: 2 questions
- Short
- Short

UNIT 4 Imperfect Competition

~8–10 Class Periods | **15–22%** AP Exam Weighting

PRD 1	4.1	Introduction to Imperfectly Competitive Markets
PRD 4	4.2	Monopoly
PRD 4	4.3	Price Discrimination
PRD 4	4.4	Monopolistic Competition
PRD 2	4.5	Oligopoly and Game Theory

Personal Progress Check 4

Multiple-choice: ~15 questions
Free-response: 2 questions
- Short
- Long

UNIT 5 Factor Markets

~6–8 Class Periods | **10–13%** AP Exam Weighting

PRD 1	5.1	Introduction to Factor Markets
PRD 3	5.2	Changes in Factor Demand and Factor Supply
PRD 2	5.3	Profit-Maximizing Behavior in Perfectly Competitive Factor Markets
PRD 2	5.4	Monopsonistic Markets

Personal Progress Check 5

Multiple-choice: ~10 questions
Free-response: 1 question
- Short

UNIT 6 Market Failure and the Role of Government

~9–11 Class Periods | **8–13%** AP Exam Weighting

POL 2	6.1	Socially Efficient and Inefficient Market Outcomes
POL 4	6.2	Externalities
POL 1	6.3	Public and Private Goods
POL 4	6.4	The Effects of Government Intervention in Different Market Structures
POL 1	6.5	Inequality

Personal Progress Check 6

Multiple-choice: ~15 questions
Free-response: 2 questions
- Short
- Long

AP MICROECONOMICS

Unit Guides

Introduction

Designed with input from the community of AP Microeconomics educators, the unit guides offer teachers helpful guidance in building students' skills and knowledge. The suggested sequence was identified through a thorough analysis of the syllabi of highly effective AP teachers and the organization of commonly assigned classroom resources.

This unit structure respects new AP teachers' time by providing one possible sequence they can adopt or modify rather than having to build from scratch. An additional benefit is that these units enable the AP Program to provide interested teachers with formative assessments—the Personal Progress Checks—that they can assign their students at the end of each unit to gauge progress toward success on the AP Exam. However, experienced AP teachers who are satisfied with their current course organization and exam results should feel no pressure to adopt these units, which comprise an optional sequence for this course.

AP MICROECONOMICS

UNIT 1

Basic Economic Concepts

12–15%
AP EXAM WEIGHTING

~9–11
CLASS PERIODS

UNIT 1

12–15% AP EXAM WEIGHTING | ~9–11 CLASS PERIODS

Basic Economic Concepts

BIG IDEA 1
Scarcity and Markets MKT

- How do individuals and economies confront the problem of scarcity?
- Why do people and countries trade with one another?

BIG IDEA 2
Costs, Benefits, and Marginal Analysis CBA

- Why do all decisions have costs?
- Why do people consider the additional costs and benefits of possible actions rather than just the total costs and benefits when making decisions?

Developing Understanding

To understand economics, students need to understand that because most resources are scarce, individuals and societies must make choices. When making rational choices, people do so "on the margin," taking into account the additional costs and benefits of their decisions. The foundational economic ideas addressed in this unit form the basis for more advanced analysis of consumer and producer behavior that will be developed throughout the course.

Building Course Skills

1.A 1.C 1.D 2.C 4.A

This unit focuses on providing students with a thorough understanding of basic economic concepts. They need this understanding to be able to apply these concepts in subsequent units as the content increases in difficulty. Many students have not had significant exposure to the study of economics in previous coursework, which means that thinking like an economist (e.g., evaluating decisions based on constraints and trade-offs and thinking on the margin) may not come naturally. Students can begin to develop this skill set early on by using simulations and examples relevant to their lives. For example, if students engage in a simulation in which they consume additional units of a good and record the utility of consuming each additional unit (please refer to the sample activities for Unit 1 on p. 33), they will be better able to understand marginal decision making and the concept of diminishing marginal utility. By actually experiencing these concepts, students will be better equipped to describe them in their own words and apply them in later contexts.

Preparing for the AP Exam

Questions that require students to analyze quantitative data and perform calculations to demonstrate their mastery of consumer theory are a frequent challenge area on the AP Exam. While many students grasp the concept of consumer optimization, they are unable to apply that understanding using numbers. To prepare students for the exam, spend time first grounding students conceptually in the principles and logic behind consumer theory and then reinforce this learning by providing opportunities for students to practice using numerical examples. Students should understand the importance of showing their work when doing any calculations in the course.

Graphical models are first introduced in this unit. Graphing is an important skill in this course that will be tested in the free-response section of the AP Exam. It's helpful to model how to set up their graphs in this unit and throughout the course, stressing the importance of properly labeling axes and curves, and providing opportunities for students to practice setting up graphs themselves and interpreting situations represented graphically.

UNIT AT A GLANCE

Enduring Understanding	Topic	Suggested Skills	Class Periods
			~9–11 CLASS PERIODS
MKT-1	**1.1 Scarcity**	1.A Describe economic concepts, principles, or models.	
MKT-1	**1.2 Resource Allocation and Economic Systems**	1.D Describe the similarities, differences, and limitations of economic concepts, principles, or models.	
MKT-1	**1.3 Production Possibilities Curve**	4.A Draw an accurately labeled graph or visual to represent an economic model or market.	
MKT-2	**1.4 Comparative Advantage and Trade**	1.C Identify an economic concept, principle, or model using quantitative data or calculations.	
CBA-1	**1.5 Cost-Benefit Analysis**	1.C Identify an economic concept, principle, or model using quantitative data or calculations.	
CBA-2	**1.6 Marginal Analysis and Consumer Choice**	2.C Interpret a specific economic outcome using quantitative data or calculations.	

Go to **AP Classroom** to assign the **Personal Progress Check** for Unit 1. Review the results in class to identify and address any student misunderstandings.

SAMPLE INSTRUCTIONAL ACTIVITIES

The sample activities on this page are optional and are offered to provide possible ways to incorporate various instructional approaches into the classroom. Teachers do not need to use these activities or instructional approaches and are free to alter or edit them. The examples below were developed in partnership with teachers from the AP community to share ways that they approach teaching some of the topics in this unit. Please refer to the Instructional Approaches section beginning on p. 105 for more examples of activities and strategies.

Activity	Topic	Sample Activity
1	1.1	**Real-World Examples** Remove a few desks from the classroom so that on the first day of class there aren't enough desks for each student. When students recognize the problem, discuss how the class will decide who gets a desk. This is a good way to introduce the problem of scarcity. It allows students to discuss trade-offs and resource allocation.
2	1.3	**Graph and Switch** Create a list of situations that can be illustrated with the production possibilities curve. Pair students and distribute a small whiteboard to each student. Read a scenario and instruct students to draw a graph that represents the situation. Then have students share their graphs with their partner and provide feedback to each other.
3	1.5	**Authentic Tasks** Assign students to investigate the total costs and benefits of a decision relevant to their lives. For example, students might research the total costs and benefits of receiving a college degree. Then have students evaluate whether that decision makes sense by comparing total benefits and total costs.
4	1.6	**Simulation and Debriefing** Carry out a classroom simulation where students consume additional units of a good (e.g., glasses of water, marshmallows, or pieces of candy) and record the utility of consuming each additional unit on a scale of 1–10. Debrief the activity as a class to connect the experience to the concepts of marginal decision making and diminishing marginal utility.

Unit Planning Notes

Use the space below to plan your approach to the unit. Consider how you want to pace your course and methods of instruction and assessment.

SUGGESTED SKILL

Principles and Models

1.A

Describe economic concepts, principles, or models.

TOPIC 1.1
Scarcity

Required Course Content

ENDURING UNDERSTANDING

MKT-1

Most resources are scarce, and in most cases the use of resources involves constraints and trade-offs.

LEARNING OBJECTIVE

MKT-1.A

Define resources and the cause(s) of their scarcity.

ESSENTIAL KNOWLEDGE

MKT-1.A.1

Economic trade-offs arise from the lack of sufficient resources (scarcity) to meet society's wants and needs.

MKT-1.A.2

Most factors of production (such as land, labor, and capital) are scarce, but some factors of production (such as established knowledge) may not be scarce due to their non-rival nature.

TOPIC 1.2
Resource Allocation and Economic Systems

SUGGESTED SKILL

Principles and Models

1.D

Describe the similarities, differences, and limitations of economic concepts, principles, or models.

Required Course Content

ENDURING UNDERSTANDING

MKT-1

Most resources are scarce, and in most cases the use of resources involves constraints and trade-offs.

LEARNING OBJECTIVE

MKT-1.B

Define how resource allocation is influenced by the economic system adopted by society.

ESSENTIAL KNOWLEDGE

MKT-1.B.1

Resource allocation involves answering three basic questions: What goods and services to produce? How to produce those goods and services? And who consumes those goods and services?

MKT-1.B.2

Resource allocation is significantly influenced by the economic system adopted by society, such as command economy, market economy, or mixed economy. Each system involves a particular set of institutional arrangements and a coordinating mechanism for allocating scarce resources and distributing output.

SUGGESTED SKILL

Graphing and Visuals

4.A

Draw an accurately labeled graph or visual to represent an economic model or market.

TOPIC 1.3
Production Possibilities Curve

Required Course Content

ENDURING UNDERSTANDING

MKT-1

Most resources are scarce, and in most cases the use of resources involves constraints and trade-offs.

LEARNING OBJECTIVE

MKT-1.C

a. Define (using graphs as appropriate) the production possibilities curve (PPC) and related terms.

b. Explain (using graphs as appropriate) how the production possibilities curve (PPC) illustrates opportunity costs, trade-offs, inefficiency, efficiency, and economic growth or contraction under various conditions.

c. Calculate (using data from PPCs or tables as appropriate) opportunity cost.

ESSENTIAL KNOWLEDGE

MKT-1.C.1

The PPC is a model used to show the trade-offs associated with allocating resources.

MKT-1.C.2

The PPC can be used to illustrate the concepts of scarcity, opportunity cost, efficiency, underutilized resources, and economic growth or contraction.

MKT-1.C.3

The shape of the PPC depends on whether opportunity costs are constant, increasing, or decreasing.

MKT-1.C.4

The PPC can shift due to changes in factors of production as well as changes in productivity/technology.

MKT-1.C.5

Economic growth results in an outward shift of the PPC.

TOPIC 1.4
Comparative Advantage and Trade

Required Course Content

ENDURING UNDERSTANDING

MKT-2

The consequences of scarcity can be mitigated through specialization in production and by exchange.

LEARNING OBJECTIVE

MKT-2.A

a. Define absolute advantage and comparative advantage.
b. Determine (using data from PPCs or tables as appropriate) absolute and comparative advantage.

ESSENTIAL KNOWLEDGE

MKT-2.A.1

Absolute advantage describes a situation in which an individual, business, or country can produce more of a good or service than any other producer with the same quantity of resources.

MKT-2.A.2

Comparative advantage describes a situation in which an individual, business, or country can produce a good or service at a lower opportunity cost than another producer.

MKT-2.B

a. Explain (using data from PPCs or tables as appropriate) how specialization according to comparative advantage with appropriate terms of trade can lead to gains from trade.
b. Calculate (using data from PPCs or tables as appropriate) mutually beneficial terms of trade.

MKT-2.B.1

Production specialization according to comparative advantage, not absolute advantage, results in exchange opportunities that lead to consumption possibilities beyond the PPC.

MKT-2.B.2

Comparative advantage and opportunity costs determine the terms of trade for exchange under which mutually beneficial trade can occur.

SUGGESTED SKILL

Principles and Models

1.C

Identify an economic concept, principle, or model using quantitative data or calculations.

AVAILABLE RESOURCES

- External Resource > Davidson Next AP Macroeconomics Course—Comparative Advantage & Trade
- Classroom Resources >
  - International Economics and the AP Microeconomics Course
  - International Economics—*The Basics of Absolute and Comparative Advantage*

SUGGESTED SKILL

Principles and Models

1.C

Identify an economic concept, principle, or model using quantitative data or calculations.

TOPIC 1.5
Cost-Benefit Analysis

Required Course Content

ENDURING UNDERSTANDING

CBA-1

Rational economic decisions require the evaluation of costs and benefits.

LEARNING OBJECTIVE

CBA-1.A

a. Define opportunity cost.
b. Explain the opportunity costs associated with choices.
c. Calculate the opportunity costs associated with choices.

CBA-1.B

a. Explain a decision by comparing total benefits and total costs (using a table or a graph when appropriate).
b. Calculate total benefits and total costs (using a table or graph where appropriate).

ESSENTIAL KNOWLEDGE

CBA-1.A.1

Rational agents consider opportunity costs, whether implicit or explicit, when calculating the total economic costs of any decision.

CBA-1.A.2

Total benefits form the metric "utility" for consumers and total revenue for firms.

CBA-1.B.1

Total net benefits, the difference between total benefits and total costs, are maximized at the optimal choice.

CBA-1.B.2

Some decisions permit rational agents to look at only marginal benefit and marginal cost. Other decisions cannot be broken down into increments in this way and must be evaluated by looking at total benefits and total costs.

TOPIC 1.6
Marginal Analysis and Consumer Choice

SUGGESTED SKILL

Interpretation

2.C

Interpret a specific economic outcome using quantitative data or calculations.

AVAILABLE RESOURCE

- Classroom Resources > Mastering Economic Thinking Skills—Focusing on Marginal Thinking and Game Theory in Microeconomics

Required Course Content

ENDURING UNDERSTANDING

CBA-2

To determine the optimal level at which to pursue an activity whose total benefits exceed total cost, rational economic agents compare marginal benefits and marginal costs.

LEARNING OBJECTIVE

CBA-2.A

a. Define the key assumptions of consumer choice theory.

b. Explain (using a table or graph as appropriate) how a rational consumer's decision making involves the use of marginal benefits and marginal costs.

c. Calculate (using a table or a graph when appropriate) how a rational consumer's decision making involves the use of marginal benefits and marginal costs.

ESSENTIAL KNOWLEDGE

CBA-2.A.1

Consumers face constraints and have to make optimal decisions accounting for these constraints.

CBA-2.A.2

In a model of rational consumer choice, consumers are assumed to make choices so as to maximize their total utility.

CBA-2.A.3

Consumers experience diminishing marginal utility in the consumption of goods and services.

CBA-2.A.4

Consumers allocate their limited income to purchase the combination of goods that maximizes their utility by equating/comparing the marginal utility of the last dollar spent on each good.

X Exclusion:
Indifference curves are beyond the scope of the course and the AP Exam, but equating the ratios of marginal utility to price is within the scope.

continued on next page

LEARNING OBJECTIVE

CBA-2.B

a. Define marginal analysis and related terms.

b. Explain a decision using marginal analysis (using a table or a graph when appropriate).

ESSENTIAL KNOWLEDGE

CBA-2.B.1

Marginal analysis involves comparing the additional benefit of increasing a given activity with the additional cost. Comparing marginal benefit (MB) with marginal cost (MC) helps individuals (firms) decide whether to increase, decrease, or maintain their consumption (production) levels.

CBA-2.B.2

The optimal quantity at any point in time does not depend on fixed costs (sunk costs) or fixed benefits that have already been determined by past choices.

CBA-2.B.3

The optimal quantity is achieved when marginal benefit is equal to marginal cost or where total benefit is maximized.

AP MICROECONOMICS

UNIT 2

Supply and Demand

20–25%
AP EXAM WEIGHTING

~13–15
CLASS PERIODS

UNIT 2

20–25% AP EXAM WEIGHTING | **~13–15** CLASS PERIODS

Supply and Demand

BIG IDEA 1
Scarcity and Markets MKT
- What determines the market price for a good or service?
- What causes market prices to change?

BIG IDEA 4
Market Inefficiency and Public Policy POL
- How does government policy affect market outcomes?

Developing Understanding

This unit will provide the basis for understanding how markets work by introducing the supply and demand model. Students will build on the concepts of scarcity and choice that were introduced in the first unit and explore the factors that influence consumer and producer behavior. They will learn how the interaction of consumers and producers in competitive markets determines market prices and results in the most efficient allocation of scarce resources. At the end of the unit, students will also begin exploring the effects of government policy on market outcomes, laying the groundwork for additional analysis in the last unit of the course.

Building Course Skills

2.A 3.A 3.C 4.A 4.C

It is important for students to continue to build on their graphing skills in this unit. Many students lose points on the AP Exam for not properly labeling axes and curves on graphs and for not properly demonstrating the effects of changes on graphs. It can help to model the appropriate setup of graphs, stressing the importance of proper labeling, and to provide opportunities for guided practice drawing and manipulating graphs.

Help students to see from the beginning of the course how graphs can be used as tools for making sense of economic situations and predicting and explaining economic outcomes. These are important skills in this unit in the context of learning about supply and demand. Even if a graph is not asked for on the exam, drawing one may help to answer a given question or explain a situation.

Preparing for the AP Exam

On the AP Exam, students frequently have difficulty answering questions that require them to analyze numbers and do calculations that are relevant to the content of this unit (e.g., calculating and interpreting measures of elasticity and calculating areas of consumer surplus, producer surplus, and deadweight loss).

Students may apply the wrong formula or mathematical process, such as when they incorrectly calculate the elasticity of demand as the change in quantity divided by the change in price, when they should instead calculate the percentage change in quantity divided by the percentage change in price. Providing students with opportunities to practice carrying out these calculations and emphasizing the importance of showing their work can help identify these types of mistakes and correct them before the AP Exam.

In other cases, though, calculation errors reveal a lack of understanding of the underlying concept, which manifests itself in an incorrect calculation. For example, students might know how to calculate the area of a triangle when asked to calculate consumer or producer surplus from a given graph but then they calculate the area of the wrong triangle. Analyzing numbers and doing calculations in this course require an understanding of the content itself.

UNIT AT A GLANCE

Enduring Understanding	Topic	Suggested Skills	Class Periods ~13–15 CLASS PERIODS
MKT-3	**2.1 Demand**	4.A Draw an accurately labeled graph or visual to represent an economic model or market.	
	2.2 Supply	4.A Draw an accurately labeled graph or visual to represent an economic model or market.	
	2.3 Price Elasticity of Demand	3.C Determine the effect(s) of a change in an economic situation using quantitative data or calculations.	
	2.4 Price Elasticity of Supply	3.C Determine the effect(s) of a change in an economic situation using quantitative data or calculations.	
	2.5 Other Elasticities	3.C Determine the effect(s) of a change in an economic situation using quantitative data or calculations.	
MKT-4	**2.6 Market Equilibrium and Consumer and Producer Surplus**	2.A Using economic concepts, principles, or models, explain how a specific economic outcome occurs or what action should be taken in order to achieve a specific economic outcome.	
	2.7 Market Disequilibrium and Changes in Equilibrium	3.A Determine the outcome of an economic situation using economic concepts, principles, or models.	
POL-1	**2.8 The Effects of Government Intervention in Markets**	4.C Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.	
	2.9 International Trade and Public Policy	4.C Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.	
	Go to **AP Classroom** to assign the **Personal Progress Check** for Unit 2. Review the results in class to identify and address any student misunderstandings.		

SAMPLE INSTRUCTIONAL ACTIVITIES

The sample activities on this page are optional and are offered to provide possible ways to incorporate various instructional approaches into the classroom. Teachers do not need to use these activities or instructional approaches and are free to alter or edit them. The examples below were developed in partnership with teachers from the AP community to share ways that they approach teaching some of the topics in this unit. Please refer to the Instructional Approaches section beginning on p. 105 for more examples of activities and strategies.

Activity	Topic	Sample Activity
1	2.1	**Simulation and Debriefing** Carry out a classroom auction for an item of value to introduce students to the relationship between price and quantity demanded. Use the data from the auction to graph demand. Then simulate a change in one of the determinants of demand (e.g., by providing students with fake money to increase their income) so that students can distinguish between a change in quantity demanded and a change in demand. Debrief the experience with students to ensure that connections are made to the concepts being studied.
2	2.2	**Simulation and Debriefing** Explain a hypothetical scenario in which you need to hire workers for one hour to clean the school bathrooms on Friday afternoon or describe another scenario that is applicable to your students' lives. Create a supply schedule on the board and conduct an auction, asking how many students will work for $0, $1, $2, etc. As students respond, ask them to explain their decisions. Graph the data and discuss the relationship between price and quantity supplied in the context of their decision making.
3	2.7	**Think-Pair-Share** Pair students and tell them to choose an economic good. Provide students with three index cards on which to write three different situations that will change the good's demand or supply. Collect the cards and choose a few to read to the class. For each scenario that is read out loud, students will draw an accurately labeled supply-demand graph that demonstrates the effect of the change on equilibrium price and quantity and check their graphs with their partner. Then call on a student pair to share the graph with the class.

Unit Planning Notes

Use the space below to plan your approach to the unit. Consider how you want to pace your course and methods of instruction and assessment.

SUGGESTED SKILL

Graphing and Visuals

4.A

Draw an accurately labeled graph or visual to represent an economic model or market.

AVAILABLE RESOURCES

- External Resource > **Davidson Next AP Macroeconomics Course—Supply & Demand**
- Classroom Resources > **Markets—Lesson: A Comparison of Graphs from Microeconomics and Macroeconomics**

TOPIC 2.1
Demand

Required Course Content

ENDURING UNDERSTANDING

MKT-3

Individuals and firms respond to incentives and face constraints.

LEARNING OBJECTIVE

MKT-3.A

a. Define (using graphs as appropriate) key terms and factors related to consumer decision making and the law of demand.

b. Explain (using graphs as appropriate) the relationship between price and quantity demanded and how buyers respond to incentives and constraints.

ESSENTIAL KNOWLEDGE

MKT-3.A.1

A well-defined system of property rights is necessary for the market system to function well.

MKT-3.A.2

Economic agents respond to incentives.

MKT-3.A.3

Individuals often respond to incentives, such as those presented by prices, but also face constraints, such as income, time, and legal and regulatory frameworks.

MKT-3.A.4

The law of demand suggests that a change in the own-price causes a change in quantity demanded in the opposite direction and a movement along a demand (marginal benefit) curve.

MKT-3.A.5

The conceptual relationship between price and quantity stated by the law of demand leads to downward-sloping demand curves explained by the income effect and substitution effect and/or by diminishing marginal utility.

MKT-3.A.6

The market demand curve (schedule) is derived from the summation of individual demand curves (schedules).

continued on next page

LEARNING OBJECTIVE	ESSENTIAL KNOWLEDGE
MKT-3.B Explain (using graphs as appropriate) buyers' responses to changes in incentives and constraints.	MKT-3.B.1 Changes in the determinants of consumer demand can cause the demand curve to shift.

SUGGESTED SKILL

Graphing and Visuals

4.A

Draw an accurately labeled graph or visual to represent an economic model or market.

AVAILABLE RESOURCES

- External Resource > **Davidson Next AP Macroeconomics Course—Supply & Demand**
- Classroom Resources > **Markets—Lesson: A Comparison of Graphs from Microeconomics and Macroeconomics**

TOPIC 2.2
Supply

Required Course Content

ENDURING UNDERSTANDING

MKT-3

Individuals and firms respond to incentives and face constraints.

LEARNING OBJECTIVE

MKT-3.C

a. Define (using graphs as appropriate) the law of supply.

b. Explain (using graphs as appropriate) the relationship between price and quantity supplied.

MKT-3.D

Explain (using graphs as appropriate) producers' (sellers') responses to changes in incentives and technology.

ESSENTIAL KNOWLEDGE

MKT-3.C.1

A change in own-price causes a change in quantity supplied in the same direction and a movement along a supply curve.

MKT-3.C.2

The market supply curve (schedule) is derived from the summation of individual supply curves (schedules). The market supply curve is upward-sloping.

MKT-3.D.1

Changes in the determinants of supply can cause the supply curve to shift.

TOPIC 2.3
Price Elasticity of Demand

SUGGESTED SKILL

Manipulation

3.C

Determine the effect(s) of a change in an economic situation using quantitative data or calculations.

Required Course Content

ENDURING UNDERSTANDING

MKT-3

Individuals and firms respond to incentives and face constraints.

LEARNING OBJECTIVE

MKT-3.E

a. Define measures of elasticity.
b. Explain (using graphs where appropriate) measures of elasticity and the impact of a given price change on total revenue or total expenditure.
c. Calculate (using data from a graph or a table as appropriate) measures of elasticity.

ESSENTIAL KNOWLEDGE

MKT-3.E.1

Economists use the concept of elasticity to measure the magnitude of percentage changes in quantity owing to any given changes in the own-price, income, and prices of related goods.

MKT-3.E.2

Price elasticity of demand is measured by the percentage change in quantity demanded divided by the percentage change in price or the responsiveness of the quantity demanded to changes in price. Elasticity varies along a linear demand curve, meaning slope is not elasticity.

continued on next page

LEARNING OBJECTIVE

MKT-3.E

a. Define measures of elasticity.
b. Explain (using graphs where appropriate) measures of elasticity and the impact of a given price change on total revenue or total expenditure.
c. Calculate (using data from a graph or a table as appropriate) measures of elasticity.

ESSENTIAL KNOWLEDGE

MKT-3.E.3

Ranges of values of elasticity of demand are described as elastic or inelastic with the separating benchmark being a magnitude of 1, where the change in the price and the change in the quantity demanded are proportional.

a. When the magnitude of the value of elasticity is greater than 1, the demand is described as being elastic with respect to that price in the range of the given change.
b. When the magnitude of the value of elasticity is less than 1, the demand is described as being inelastic with respect to that price in the range of the given change.
c. When the magnitude of the value of elasticity is equal to 1, the demand is described as being unit elastic with respect to that price in the range of the given change.

MKT-3.E.4

The price elasticity of demand depends on certain factors such as the availability of substitutes.

MKT-3.E.5

The impact of a given price change on total revenue or total expenditure will depend on whether demand is elastic, inelastic, or unit elastic.

TOPIC 2.4
Price Elasticity of Supply

SUGGESTED SKILL

Manipulation

3.C

Determine the effect(s) of a change in an economic situation using quantitative data or calculations.

Required Course Content

ENDURING UNDERSTANDING

MKT-3

Individuals and firms respond to incentives and face constraints.

LEARNING OBJECTIVE

MKT-3.E

a. Define measures of elasticity.
b. Explain (using graphs where appropriate) measures of elasticity and the impact of a given price change on total revenue or total expenditure.
c. Calculate (using data from a graph or a table as appropriate) measures of elasticity.

ESSENTIAL KNOWLEDGE

MKT-3.E.6

Price elasticity of supply is measured by the percentage change in quantity supplied divided by the percentage change in price, or the responsiveness of the quantity supplied to changes in price.

MKT-3.E.7

Ranges of values of elasticity of supply are described as elastic or inelastic with the separating benchmark being a magnitude of 1, where the change in the price and the change in the quantity supplied are proportional.

a. When the magnitude of the value of elasticity is greater than 1, the supply is described as being elastic with respect to that price in the range of the given change.
b. When the magnitude of the value of elasticity is less than 1, the supply is described as being inelastic with respect to that price in the range of the given change.
c. When the magnitude of the value of elasticity is equal to 1, the supply is described as being unit elastic with respect to that price in the range of the given change.

MKT-3.E.8

The price elasticity of supply depends on certain factors such as the price of alternative inputs.

SUGGESTED SKILL

Manipulation

3.C

Determine the effect(s) of a change in an economic situation using quantitative data or calculations.

TOPIC 2.5
Other Elasticities

Required Course Content

ENDURING UNDERSTANDING

MKT-3

Individuals and firms respond to incentives and face constraints.

LEARNING OBJECTIVE

MKT-3.E

a. Define measures of elasticity.

b. Explain (using graphs where appropriate) measures of elasticity and the impact of a given price change on total revenue or total expenditure.

c. Calculate (using data from a graph or a table as appropriate) measures of elasticity.

ESSENTIAL KNOWLEDGE

MKT-3.E.9

Elasticity can be measured for any determinant of demand or supply, not just the price.

MKT-3.E.10

Income elasticity of demand is measured by the percentage change in the quantity demanded divided by the percentage change in consumers' income. Economists use the income elasticity of demand to determine whether a good is normal or inferior.

MKT-3.E.11

Cross-price elasticity of demand is measured by the percentage change in the quantity demanded of one good divided by the percentage change in the price of another good. Economists use the cross-price elasticity of demand to determine whether goods are substitutes, complements, or not related.

TOPIC 2.6
Market Equilibrium and Consumer and Producer Surplus

SUGGESTED SKILL

Interpretation

2.A

Using economic concepts, principles, or models, explain how a specific economic outcome occurs or what action should be taken in order to achieve a specific economic outcome.

Required Course Content

ENDURING UNDERSTANDING

MKT-4

Although equilibria are stable, an economy can move from one equilibrium to another if market conditions change.

LEARNING OBJECTIVE

MKT-4.A

a. Define (using graphs as appropriate) market equilibrium, consumer surplus, and producer surplus.

b. Explain (using graphs as appropriate) how equilibrium price, quantity, consumer surplus, and producer surplus for a good or service are determined.

c. Calculate (using data from a graph or table as appropriate) areas of consumer surplus and producer surplus at equilibrium.

ESSENTIAL KNOWLEDGE

MKT-4.A.1

The supply-demand model is a tool for understanding what factors influence prices and quantities and why prices and quantities might differ across markets or change over time.

MKT-4.A.2

In a perfectly competitive market, equilibrium is achieved (and markets clear with no shortages or surpluses) when the price of a good or service brings the quantity supplied and quantity demanded into balance, in the sense that buyers wish to purchase the same quantity that sellers wish to provide.

MKT-4.A.3

Equilibrium price provides information to economic decision-makers to guide resource allocation.

MKT-4.A.4

Economists use consumer surplus and producer surplus to measure the benefits markets create to buyers and sellers and understand market efficiency.

MKT-4.A.5

Market equilibrium maximizes total economic surplus in the absence of market failures, meaning that perfectly competitive markets are efficient.

SUGGESTED SKILL

Manipulation

3.A

Determine the outcome of an economic situation using economic concepts, principles, or models.

AVAILABLE RESOURCES

- External Resource > **Davidson Next AP Macroeconomics Course—Supply & Demand**
- Classroom Resources > **Markets—Lesson: A Comparison of Graphs from Microeconomics and Macroeconomics**

TOPIC 2.7

Market Disequilibrium and Changes in Equilibrium

Required Course Content

ENDURING UNDERSTANDING

MKT-4

Although equilibria are stable, an economy can move from one equilibrium to another if market conditions change.

LEARNING OBJECTIVE

MKT-4.B

a. Define a surplus and shortage.

b. Explain (using graphs where appropriate) how changes in underlying conditions and shocks to a competitive market can alter price, quantity, consumer surplus, and producer surplus.

c. Calculate (using data from a graph or table as appropriate) changes in price, quantity, consumer surplus, and producer surplus in response to changes in market conditions or market disequilibrium.

ESSENTIAL KNOWLEDGE

MKT-4.B.1

Whenever markets experience imbalances—creating disequilibrium prices and quantities, surpluses, and shortages—market forces drive price and quantity toward equilibrium.

MKT-4.B.2

Factors that shift the market demand and market supply curves cause price, quantity, consumer surplus, producer surplus, and total economic surplus (within that market) to change. The impact of the change depends on the price elasticities of demand and supply.

TOPIC 2.8
The Effects of Government Intervention in Markets

Required Course Content

ENDURING UNDERSTANDING

POL-1

Government policies influence consumer and producer behavior and therefore affect market outcomes.

LEARNING OBJECTIVE

POL-1.A

a. Define forms of government price and quantity intervention.
b. Explain (using graphs where appropriate) how government policies alter consumer and producer behaviors that influence incentives and therefore affect outcomes.
c. Calculate (using data from a graph or table where appropriate) changes in market outcomes resulting from government policies.

ESSENTIAL KNOWLEDGE

POL-1.A.1

Some government policies, such as price floors, price ceilings, and other forms of price and quantity regulation, affect incentives and outcomes in all market structures.

POL-1.A.2

Governments use taxes and subsidies to change incentives in ways that influence consumer and producer behavior, shifting the supply and demand curves accordingly.

POL-1.A.3

Taxes and subsidies affect government revenues or costs.

POL-1.A.4

Government intervention in a market producing the efficient quantity through taxes, subsidies, price controls, or quantity controls can only decrease allocative efficiency.

POL-1.A.5

Deadweight loss represents the losses to buyers and sellers as a result of government intervention in an efficient market.

POL-1.A.6

The incidence of taxes and subsidies imposed on goods traded in perfectly competitive markets depends on the elasticity of supply and demand.

SUGGESTED SKILL

Graphing and Visuals

4.C

Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.

SUGGESTED SKILL

Graphing and Visuals

4.C

Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.

AVAILABLE RESOURCES

- Classroom Resources >
  - International Economics and the AP Microeconomics Course
  - International Economics

TOPIC 2.9
International Trade and Public Policy

Required Course Content

ENDURING UNDERSTANDING

POL-1

Government policies influence consumer and producer behavior and therefore affect market outcomes.

LEARNING OBJECTIVE

POL-1.B

a. Define tariffs and quotas.
b. Explain (using graphs where appropriate) how markets are affected by public policy related to international trade.
c. Calculate (using data from a graph or table as appropriate) changes in market outcomes resulting from public policy related to international trade.

ESSENTIAL KNOWLEDGE

POL-1.B.1

Equilibria in competitive markets may be altered by the decision to open an economy to trade with other countries; equilibrium price can be higher or lower than under autarky, and the gap between domestic supply and demand is filled by trade. Opening an economy to trade with other countries affects consumer surplus, producer surplus, and total economic surplus.

POL-1.B.2

Tariffs, which governments sometimes use to influence international trade, affect domestic price, quantity, government revenue, and consumer surplus and total economic surplus.

POL-1.B.3

Quotas can be used to alter quantities produced and therefore affect price, consumer surplus, and total economic surplus.

Exclusion:
The graphing of quotas is beyond the scope of the course and the AP Exam, but understanding how quotas affect quantities produced is within the scope.

AP MICROECONOMICS

UNIT 3

Production, Cost, and the Perfect Competition Model

22–25%
AP EXAM WEIGHTING

~11–13
CLASS PERIODS

UNIT 3

22–25% AP EXAM WEIGHTING | **~11–13** CLASS PERIODS

Production, Cost, and the Perfect Competition Model

BIG IDEA 2
Costs, Benefits, and Marginal Analysis CBA
- How do businesses use marginal analysis to make decisions?

BIG IDEA 3
Production Choices and Behavior PRD
- What drives producers' decision making?
- How can a market be perfectly competitive?

Developing Understanding

Unit 3 focuses on firm behavior and culminates with an introduction to the perfect competition model, which will form a basis of comparison for other market structures in the next unit. This unit builds on the idea of supply, which was introduced in the previous unit, and explores in more detail what drives the decisions that firms make. Thinking like a firm may be challenging for students, who are more used to acting as consumers in their everyday lives. Drawing connections to students' own experiences and carrying out classroom simulations can help bring these concepts to life. Reminding students of the ways in which the behavior of firms is consistent with the ideas of cost-benefit analysis and marginal decision-making addressed in the first unit of the course may also be helpful in elucidating these concepts.

Building Course Skills

1.A 1.C 1.D 2.A 4.A

In this unit, students will be expected to describe the production function, the costs of production, and firms' profit-maximizing behavior. Students should be able to represent these concepts graphically and numerically. It is important to devote sufficient time to introducing new vocabulary to students and may be helpful for students to create a vocabulary notebook. Since grasping the behavior of firms is not always intuitive for students, consider beginning this unit by carrying out a factory simulation in the classroom and having students graph the data generated and interpret the outcomes of the simulation. It helps to debrief the simulation during and immediately following the activity to clarify misconceptions and deepen students' understanding of relevant concepts. Students should have additional opportunities to practice graphing, interpreting given graphs, and doing numerical problems in the context of the content covered in this unit. Proper graphing habits should continue to be reinforced throughout this unit and the entire course.

Preparing for the AP Exam

The perfect competition model is foundational to the study of market structures in this course and is frequently tested on the AP Exam. It's important to ground students in the conceptual underpinnings of perfect competition, including the concept of efficiency and production in both the short run and the long run. Students will benefit from having multiple opportunities to practice drawing and interpreting graphs that represent perfect competition; past AP Exams may be helpful in this exercise. If students are able to grasp the concepts behind perfect competition and how it's graphically represented, they will be better able to understand imperfect market structures in the next unit.

Questions on the AP Exam that cover long-run production costs are often challenging for students. It may be helpful to provide students with opportunities to practice identifying and explaining given situations to reinforce their understanding of long-run production. Keep in mind, though, that while this is a difficult topic for students, it does not comprise a significant portion of the AP Exam.

UNIT AT A GLANCE

Enduring Understanding	Topic	Suggested Skills	Class Periods ~11–13 CLASS PERIODS
PRD-1	**3.1 The Production Function**	1.A Describe economic concepts, principles, or models.	
	3.2 Short-Run Production Costs	4.A Draw an accurately labeled graph or visual to represent an economic model or market.	
	3.3 Long-Run Production Costs	1.D Describe the similarities, differences, and limitations of economic concepts, principles, or models.	
CBA-2	**3.4 Types of Profit**	1.C Identify an economic concept, principle, or model using quantitative data or calculations.	
	3.5 Profit Maximization	2.A Using economic concepts, principles, or models, explain how a specific economic outcome occurs or what action should be taken in order to achieve a specific economic outcome.	
PRD-2	**3.6 Firms' Short-Run Decisions to Produce and Long-Run Decisions to Enter or Exit a Market**	2.A Using economic concepts, principles, or models, explain how a specific economic outcome occurs, or what action should be taken in order to achieve a specific economic outcome.	
PRD-3	**3.7 Perfect Competition**	4.A Draw an accurately labeled graph or visual to represent an economic model or market.	

Go to **AP Classroom** to assign the **Personal Progress Check** for Unit 3.
Review the results in class to identify and address any student misunderstandings.

SAMPLE INSTRUCTIONAL ACTIVITIES

The sample activities on this page are optional and are offered to provide possible ways to incorporate various instructional approaches into the classroom. Teachers do not need to use these activities or instructional approaches and are free to alter or edit them. The examples below were developed in partnership with teachers from the AP community to share ways that they approach teaching some of the topics in this unit. Please refer to the Instructional Approaches section beginning on p. 105 for more examples of activities and strategies.

Activity	Topic	Sample Activity
1	3.1	**Simulation and Debriefing** Carry out a factory simulation in which students take on the role of producers in a firm. Begin the simulation with a few fixed capital resources and no workers. Then add workers one at a time and record production data as students seek to produce additional units of a good (e.g., paper links). Connect the concepts of total product, marginal product, and average product to their results when debriefing the experience.
2	3.2	**Think-Pair-Share** Provide students with a list of formulas for short-run production costs. Include formulas that show total, average, and marginal costs. Some formulas on the list should be correct and some should be incorrect. Students should then determine which are or are not correct and explain why to a partner.
3	3.4	**Real-World Examples** The difference between accounting profit and economic profit is often difficult for students to understand, so it can be helpful to solidify students' understanding by using concrete examples. You can provide students with the salary and costs associated with a particular job and discuss whether that person makes accounting profit. Then discuss what implicit costs are and whether that person makes economic profit.

Unit Planning Notes

Use the space below to plan your approach to the unit. Consider how you want to pace your course and methods of instruction and assessment.

SUGGESTED SKILL

Principles and Models

1.A

Describe economic concepts, principles, or models.

TOPIC 3.1
The Production Function

Required Course Content

ENDURING UNDERSTANDING

PRD-1

Firms' production and cost constraints over different input and output levels shape optimal decisions in the short run and long run.

LEARNING OBJECTIVE

PRD-1.A

a. Define (using graphs where appropriate) key terms and concepts relating to production and cost.

b. Explain (using graphs where appropriate) how production and cost are related in the short run and long run.

c. Calculate (using data from a graph or table as appropriate) the various measures of productivity and short-run and long-run costs.

ESSENTIAL KNOWLEDGE

PRD-1.A.1

The production function explains the relationship between inputs and outputs both in the short run and the long run.

PRD-1.A.2

Marginal product and average product change as input usage changes, and hence, total product changes.

PRD-1.A.3

Diminishing marginal returns occur as the firm employs more of one input, holding other inputs constant, to produce a product (output) in the short run.

TOPIC 3.2
Short-Run Production Costs

SUGGESTED SKILL

Graphing and Visuals

4.A

Draw an accurately labeled graph or visual to represent an economic model or market.

Required Course Content

ENDURING UNDERSTANDING

PRD-1

Firms' production and cost constraints over different input and output levels shape optimal decisions in the short run and long run.

LEARNING OBJECTIVE

PRD-1.A

a. Define (using graphs where appropriate) key terms and concepts relating to production and cost.

b. Explain (using graphs where appropriate) how production and cost are related in the short run and long run.

c. Calculate (using data from a graph or table as appropriate) the various measures of productivity and short-run and long-run costs.

ESSENTIAL KNOWLEDGE

PRD-1.A.4

Fixed costs and variable costs determine the total cost.

PRD-1.A.5

Marginal cost, average (fixed, variable, and total) cost, total cost, and total variable cost change as total output changes, but total fixed cost remains constant at all output levels, including zero output.

PRD-1.A.6

Production functions with diminishing marginal returns yield an upward-sloping marginal cost curve.

PRD-1.A.7

Specialization and the division of labor reduce marginal costs for firms.

PRD-1.A.8

Cost curves can shift in response to changes in input costs and productivity.

SUGGESTED SKILL

Principles and Models

1.D

Describe the similarities, differences, and limitations of economic concepts, principles, or models.

TOPIC 3.3
Long-Run Production Costs

Required Course Content

ENDURING UNDERSTANDING

PRD-1

Firms' production and cost constraints over different input and output levels shape optimal decisions in the short run and long run.

LEARNING OBJECTIVE

PRD-1.A

a. Define (using graphs where appropriate) key terms and concepts relating to production and cost.

b. Explain (using graphs where appropriate) how production and cost are related in the short run and long run.

c. Calculate (using data from a graph or table as appropriate) the various measures of productivity and short-run and long-run costs.

ESSENTIAL KNOWLEDGE

PRD-1.A.9

In the long run, firms can adjust all their inputs, and as a result, all costs become variable.

PRD-1.A.10

The relationship between inputs and outputs in the long run is described by the scale of production—increasing, decreasing, or constant returns to scale.

PRD-1.A.11

The long-run average total cost is characterized by economies of scale, diseconomies of scale, or constant returns to scale (efficient scale).

PRD-1.A.12

The minimum efficient scale plays a role in determining the concentration of firms in a market and the market structure.

TOPIC 3.4
Types of Profit

SUGGESTED SKILL

Principles and Models

1.C

Identify an economic concept, principle, or model using quantitative data or calculations.

Required Course Content

ENDURING UNDERSTANDING

CBA-2

To determine the optimal level at which to pursue an activity whose total benefits exceed total cost, rational economic agents compare marginal benefits and marginal costs.

LEARNING OBJECTIVE

CBA-2.C

a. Define the different types of profit.
b. Explain how firms respond to profit opportunities.
c. Calculate a firm's profit or loss.

ESSENTIAL KNOWLEDGE

CBA-2.C.1

Firms respond to economic profit (loss) rather than accounting profit.

CBA-2.C.2

Accounting profit fails to account for implicit costs (such as cost of financial capital, compensation for risk, or an entrepreneur's time), which, if fully compensated, result in normal profit.

SUGGESTED SKILL

Interpretation

2.A

Using economic concepts, principles, or models, explain how a specific economic outcome occurs, or what action should be taken in order to achieve a specific economic outcome.

AVAILABLE RESOURCE

- Classroom Resources > **Mastering Economic Thinking Skills—*Marginal Thinking: Key Concepts and Questions***

TOPIC 3.5
Profit Maximization

Required Course Content

ENDURING UNDERSTANDING

CBA-2

To determine the optimal level at which to pursue an activity whose total benefits exceed total cost, rational economic agents compare marginal benefits and marginal costs.

LEARNING OBJECTIVE

CBA-2.D

a. Define (using graphs or data as appropriate) the profit-maximizing rule.

b. Explain (using a graph or data as appropriate) the profit-maximizing level of production.

ESSENTIAL KNOWLEDGE

CBA-2.D.1

Firms are assumed to produce output to maximize their profits by comparing marginal revenue and marginal cost.

TOPIC 3.6
Firms' Short-Run Decisions to Produce and Long-Run Decisions to Enter or Exit a Market

Required Course Content

ENDURING UNDERSTANDING

PRD-2

Firms' short-run decisions to produce output, and long-run decisions to enter or exit a market, are based on profitability.

LEARNING OBJECTIVE

PRD-2.A

Explain (using graphs or data where appropriate) firms' short-run decisions to produce positive output levels, or long-run decisions to enter or exit a market in response to profit-making opportunities.

ESSENTIAL KNOWLEDGE

PRD-2.A.1

In the short run, firms decide to operate (i.e., produce positive output) or shut down (i.e., produce zero output) by comparing total revenue to total variable cost or price to average variable cost (AVC).

PRD-2.A.2

In the absence of barriers to entry or exit, in the long run (i.e., once factors that are fixed in the short run become variable), firms enter a market in which there are profit-making opportunities and exit a market when they anticipate economic losses.

SUGGESTED SKILL

Interpretation

2.A

Using economic concepts, principles, or models, explain how a specific economic outcome occurs, or what action should be taken in order to achieve a specific economic outcome.

SUGGESTED SKILL

Graphing and Visuals

4.A

Draw an accurately labeled graph or visual to represent an economic model or market.

AVAILABLE RESOURCE

- Classroom Resources > Markets—Product and Factor Markets

TOPIC 3.7
Perfect Competition

Required Course Content

ENDURING UNDERSTANDING

PRD-3

Even with a common goal of profit-maximization, market structure constrains and influences prices, output, and efficiency.

LEARNING OBJECTIVE

PRD-3.A

a. Define (using graphs as appropriate) the characteristics of perfectly competitive markets and efficiency.

b. Explain (using graphs where appropriate) equilibrium and firm decision making in perfectly competitive markets and how prices in perfectly competitive markets lead to efficient outcomes.

c. Calculate (using data from a graph or table as appropriate) economic profit (loss) in perfectly competitive markets.

ESSENTIAL KNOWLEDGE

PRD-3.A.1

A perfectly competitive market is efficient. Firms in perfectly competitive markets face no barriers to entry and have no market power.

PRD-3.A.2

In perfectly competitive markets, prices communicate to consumers and producers the magnitude of others' marginal costs of production and marginal benefits of consumption and provide incentives to act on that information (i.e., price equals marginal cost in an efficient market).

PRD-3.A.3

In perfectly competitive markets, firms can sell all their outputs at a constant price determined by the market.

PRD-3.A.4

At a competitive market equilibrium, firms are price takers and select output to maximize profit by producing the level of output where the marginal cost equals marginal revenue (at the price).

continued on next page

LEARNING OBJECTIVE

PRD-3.A

a. Define (using graphs as appropriate) the characteristics of perfectly competitive markets and efficiency.

b. Explain (using graphs where appropriate) equilibrium and firm decision making in perfectly competitive markets and how prices in perfectly competitive markets lead to efficient outcomes.

c. Calculate (using data from a graph or table as appropriate) economic profit (loss) in perfectly competitive markets.

ESSENTIAL KNOWLEDGE

PRD-3.A.5

At a competitive market equilibrium, the price of a product equals both the private marginal benefit received by the last unit consumed and the private marginal cost incurred to produce the last unit, thus achieving allocative efficiency.

PRD-3.A.6

In a short-run competitive equilibrium, price can either be above or below its long-run competitive level resulting in profits or losses, motivating entry or exit of firms and moving prices and quantities toward long-run equilibrium.

PRD-3.A.7

In a long-run perfectly competitive equilibrium, productive efficiency implies all operating firms produce at efficient scale, price equals marginal cost and minimum average total cost, and firms earn zero economic profit.

PRD-3.A.8

Firms may be in a constant cost, increasing cost, or decreasing cost industry. Long-run prices depend on the portion of the long-run cost curves on which firms operate.

PRD-3.A.9

A perfectly competitive market in long-run equilibrium is allocatively and productively efficient.

AP MICROECONOMICS

UNIT 4

Imperfect Competition

15–22%
AP EXAM WEIGHTING

~8–10
CLASS PERIODS

Remember to go to **AP Classroom** to assign students the online **Personal Progress Check** for this unit.

Whether assigned as homework or completed in class, the **Personal Progress Check** provides each student with immediate feedback related to this unit's topics and skills.

Personal Progress Check 4

Multiple-choice: ~15 questions
Free-response: 2 questions

- Short
- Long

UNIT 4

15–22% AP EXAM WEIGHTING | **~8–10** CLASS PERIODS

Imperfect Competition

BIG IDEA 3
Production Choices and Behavior PRD

- What drives producers' decision making?
- How are imperfectly competitive markets inefficient?

Developing Understanding

In the real world, firms rarely operate in perfectly competitive markets. In this unit, students will encounter the ways in which imperfectly competitive markets depart from the model of perfect competition introduced in Unit 3. Students will continue to build on their understanding of what it means for a market to be efficient or inefficient as they consider the welfare implications of imperfect markets. In the context of learning about oligopoly behavior, students will be introduced to the field of game theory as an approach to studying strategic decision making.

Building Course Skills

1.D 2.C 4.B 4.C

In this unit, students should be able to describe the similarities and differences between market structures. To help students develop this skill, consider first approaching the topic by using real-world examples and having students describe distinguishing characteristics of those examples. Using graphic organizers such as Venn diagrams might also be helpful to keep track of similarities and differences.

Graphing continues to be essential in this unit, and graphing each market structure can be difficult for some students. Be deliberate in modeling the differences between a license/patent monopoly and a natural monopoly, as well as a monopolistically competitive firm both in the short-run (with profits or losses) and at long-run equilibrium. While it is critical that students understand the differences between the graphs in each of these models, it is also important to stress the similarities. For example, a common characteristic of all imperfect product market graphs is that the marginal revenue curve lies below the demand curve. Regardless of the market structure, students should practice neatly drawing each graph and labeling it appropriately until they can do so flawlessly.

Preparing for the AP Exam

Game theory is an important concept in the field of economics and is a challenge for some students on both the multiple-choice and free-response sections of the AP Exam. Students should have sufficient opportunities for guided practice interpreting payoff matrices, identifying dominant strategies and Nash equilibria, and redrawing payoff matrices after given changes. Answering past free-response questions on the topic (e.g., **2013 AP Exam Question #2**) is a good way to practice.

UNIT AT A GLANCE

Enduring Understanding	Topic	Suggested Skills	Class Periods ~8–10 CLASS PERIODS
PRD-3	**4.1 Introduction to Imperfectly Competitive Markets**	1.D Describe the similarities, differences, and limitations of economic concepts, principles, or models.	
	4.2 Monopoly	4.B Demonstrate your understanding of a specific economic situation on an accurately labeled graph or visual.	
	4.3 Price Discrimination	4.C Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.	
	4.4 Monopolistic Competition	4.B Demonstrate your understanding of a specific economic situation on an accurately labeled graph or visual.	
	4.5 Oligopoly and Game Theory	2.C Interpret a specific economic outcome using quantitative data or calculations.	
	Go to **AP Classroom** to assign the **Personal Progress Check** for Unit 4. Review the results in class to identify and address any student misunderstandings.		

SAMPLE INSTRUCTIONAL ACTIVITIES

The sample activities on this page are optional and are offered to provide possible ways to incorporate various instructional approaches into the classroom. Teachers do not need to use these activities or instructional approaches and are free to alter or edit them. The examples below were developed in partnership with teachers from the AP community to share ways that they approach teaching some of the topics in this unit. Please refer to the Instructional Approaches section beginning on p. 105 for more examples of activities and strategies.

Activity	Topic	Sample Activity
1	4.1	**Response Groups** Divide students into four groups representing a monopoly, an oligopoly, monopolistic competition, and perfect competition. Each group should come up with real-world examples that represent its assigned market and use those examples to describe the distinguishing characteristics of its market type. After working in small groups, a presenter will share each group's findings with the class.
2	4.2	**Socratic Seminar** Following instruction on the characteristics of a monopoly, provide students with several articles containing varied analysis of an antitrust case. Ask students to discuss and evaluate whether the situation meets the criteria of a monopoly, using economic vocabulary and referencing the articles.
3	4.5	**Systematic and Explicit Instruction** Demonstrate to students how to identify a dominant strategy and Nash equilibrium in a 2 × 2 payoff matrix. Then provide students with sample problems to work through on their own.

Unit Planning Notes

Use the space below to plan your approach to the unit. Consider how you want to pace your course and methods of instruction and assessment.

SUGGESTED SKILL

Principles and Models

1.D

Describe the similarities, differences, and limitations of economic concepts, principles, or models.

TOPIC 4.1
Introduction to Imperfectly Competitive Markets

Required Course Content

ENDURING UNDERSTANDING

PRD-3

Even with a common goal of profit-maximization, market structure constrains and influences prices, output, and efficiency.

LEARNING OBJECTIVE

PRD-3.B

a. Define (using graphs where appropriate) the characteristics of imperfectly competitive markets and inefficiency.

ESSENTIAL KNOWLEDGE

PRD-3.B.1

Imperfectly competitive markets include monopoly, oligopoly, and monopolistic competition in product markets and monopsony in factor markets.

PRD-3.B.2

In imperfectly competitive output markets and assuming all else is constant, a firm must lower price to sell additional units.

PRD-3.B.3

In imperfectly competitive markets, consumers and producers respond to prices that are above the marginal costs of production and/or marginal benefits of consumption (i.e., price is greater than marginal cost in an inefficient market).

PRD-3.B.4

Incentives to enter an industry may be mitigated by barriers to entry. Barriers to entry—such as high fixed/start-up costs, legal barriers to entry, and exclusive ownership of key resources—can sustain imperfectly competitive market structures.

TOPIC 4.2
Monopoly

SUGGESTED SKILL

Graphing and Visuals

4.B

Demonstrate your understanding of a specific economic situation on an accurately labeled graph or visual.

Required Course Content

ENDURING UNDERSTANDING

PRD-3

Even with a common goal of profit-maximization, market structure constrains and influences prices, output, and efficiency.

LEARNING OBJECTIVE

PRD-3.B

b. Explain (using graphs where appropriate) equilibrium, firm decision making, consumer surplus, producer surplus, profit (loss), and deadweight loss in imperfectly competitive markets and why prices in imperfectly competitive markets cannot be relied on to coordinate the actions of all possible market participants and can lead to inefficient outputs.

c. Calculate (using data from a graph or table as appropriate) areas of consumer surplus, producer surplus, profit (loss), and deadweight loss in imperfectly competitive markets.

ESSENTIAL KNOWLEDGE

PRD-3.B.5

A monopoly exists because of barriers to entry.

PRD-3.B.6

In a monopoly, equilibrium (profit-maximizing) quantity is determined by equating marginal revenue (MR) to marginal cost (MC). The price charged is greater than the marginal cost.

PRD-3.B.7

In a natural monopoly, long-run economies of scale for a single firm exist throughout the entire effective demand of its product.

SUGGESTED SKILL

Graphing and Visuals

4.C

Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.

TOPIC 4.3
Price Discrimination

Required Course Content

ENDURING UNDERSTANDING

PRD-3

Even with a common goal of profit-maximization, market structure constrains and influences prices, output, and efficiency.

LEARNING OBJECTIVE

PRD-3.B

b. Explain (using graphs where appropriate) equilibrium, firm decision making, consumer surplus, producer surplus, profit (loss), and deadweight loss in imperfectly competitive markets and why prices in imperfectly competitive markets cannot be relied on to coordinate the actions of all possible market participants and can lead to inefficient outputs.

c. Calculate (using data from a graph or table as appropriate) areas of consumer surplus, producer surplus, profit (loss), and deadweight loss in imperfectly competitive markets.

ESSENTIAL KNOWLEDGE

PRD-3.B.8

A firm with market power can engage in price discrimination to increase its profits or capture additional consumer surplus under certain conditions.

PRD-3.B.9

With perfect price discrimination, a monopolist produces the quantity where price equals marginal cost (just as a competitive market would) but extracts all economic surplus associated with its product and eliminates all deadweight loss.

TOPIC 4.4
Monopolistic Competition

SUGGESTED SKILL

Graphing and Visuals

4.B

Demonstrate your understanding of a specific economic situation on an accurately labeled graph or visual.

Required Course Content

ENDURING UNDERSTANDING

PRD-3

Even with a common goal of profit-maximization, market structure constrains and influences prices, output, and efficiency.

LEARNING OBJECTIVE

PRD-3.B

b. Explain (using graphs where appropriate) equilibrium, firm decision making, consumer surplus, producer surplus, profit (loss), and deadweight loss in imperfectly competitive markets and why prices in imperfectly competitive markets cannot be relied on to coordinate the actions of all possible market participants and can lead to inefficient outputs.

c. Calculate (using data from a graph or table as appropriate) areas of consumer surplus, producer surplus, profit (loss), and deadweight loss in imperfectly competitive markets.

ESSENTIAL KNOWLEDGE

PRD-3.B.10

In a market with monopolistic competition, firms producing differentiated products may earn positive, negative, or zero economic profit in the short run. Firms typically use advertising as a means of differentiating their product. Free entry and exit drive profits to zero in the long run. The output level, however, is smaller than the output level needed to minimize average total costs, creating excess capacity. The price is greater than marginal cost, creating allocative inefficiency.

SUGGESTED SKILL

Interpretation

2.C

Interpret a specific economic outcome using quantitative data or calculations.

AVAILABLE RESOURCES

- Classroom Resources >
  - Mastering Economic Thinking Skills—*Focusing on Marginal Thinking and Game Theory in Microeconomics*
  - Mastering Economic Thinking Skills—*Teaching About Game Theory*

TOPIC 4.5
Oligopoly and Game Theory

Required Course Content

ENDURING UNDERSTANDING

PRD-3

Even with a common goal of profit-maximization, market structure constrains and influences prices, output, and efficiency.

LEARNING OBJECTIVE

PRD-3.C

a. Define (using tables as appropriate) key terms, strategies, and concepts relating to oligopolies and simple games.
b. Explain (using tables as appropriate) strategies and equilibria in simple games and the connections to theoretical behaviors in various oligopoly market and non-market settings.
c. Calculate (using tables as appropriate) the incentive sufficient to alter a player's dominant strategy.

ESSENTIAL KNOWLEDGE

PRD-3.C.1

An oligopoly is an inefficient market structure with high barriers to entry, where there are few firms acting interdependently.

PRD-3.C.2

Firms in an oligopoly have an incentive to collude and form cartels.

PRD-3.C.3

A game is a situation in which a number of individuals take actions, and the payoff for each individual depends directly on both the individual's own choice and the choices of others.

PRD-3.C.4

A strategy is a complete plan of actions for playing a game; the normal form model of a game shows the payoffs that result from each collection of strategies (one for each player).

PRD-3.C.5

A player has a dominant strategy when the payoff to a particular action is always higher independent of the action taken by the other player.

continued on next page

LEARNING OBJECTIVE

PRD-3.C

a. Define (using tables as appropriate) key terms, strategies, and concepts relating to oligopolies and simple games.

b. Explain (using tables as appropriate) strategies and equilibria in simple games and the connections to theoretical behaviors in various oligopoly market and non-market settings.

c. Calculate (using tables as appropriate) the incentive sufficient to alter a player's dominant strategy.

ESSENTIAL KNOWLEDGE

PRD-3.C.6

A Nash equilibrium is a condition describing the set of actions in which no player can increase his or her payoff by unilaterally taking another action, given the other players' actions.

Exclusion:

Dominant strategies and Nash equilibrium with more than two players or more than two actions per player, mixed-strategy equilibria, extensive form games, and normal form games with more than two players or more than two actions per player are beyond the scope of the course and the AP Exam.

PRD-3.C.7

Oligopolists have difficulty achieving the monopoly outcome for reasons similar to those that prevent players from achieving a cooperative outcome in the Prisoner's Dilemma; nevertheless, prices are generally higher and quantities lower with oligopoly (or duopoly) than with perfect competition.

AP MICROECONOMICS

UNIT 5

Factor Markets

10–13%
AP EXAM WEIGHTING

~6–8
CLASS PERIODS

UNIT 5

10–13% AP EXAM WEIGHTING | **~6–8** CLASS PERIODS

Factor Markets

BIG IDEA 3
Production Choices and Behavior PRD

- How are prices for resources determined?
- How do firms use resource prices to make decisions?

Developing Understanding

By this point in the course, students are familiar with how product markets operate and what drives firm decision making. In this unit, students will apply many of the concepts they learned previously but now in the context of factor markets. Like with product markets, the laws of supply and demand apply to factor markets with an upward-sloping supply curve and a downward-sloping demand curve. In factor markets, firms hire additional resources up to the point at which the resource's marginal revenue product is equal to its marginal resource cost. This decision is another application of the idea first introduced in Unit 1 of making an optimal choice by equating marginal benefit with marginal cost and firms' decisions to maximize profits where marginal revenue equals marginal cost.

Building Course Skills

1.A 2.A 2.C 3.B

In this unit, students should be able to describe the principles of factor markets so that they can apply that understanding in context. Devote sufficient time to introducing students to new concepts and vocabulary while also connecting key terms and concepts to items addressed previously in the course.

Students should also be able to represent factor markets graphically in this unit. It helps to explain the basis of each model and the underlying assumptions so that students can create properly labeled graphs to represent economic situations and interpret given graphs.

Students will continue to build their quantitative skills by solving problems in which they interpret how firms should allocate inputs to minimize costs or maximize profits. Once again, it's important to spend time conceptually grounding students in the underlying concepts of these quantitative problems and provide ample time for numerical examples and practice.

Preparing for the AP Exam

Factor markets are one of the biggest challenge areas for students on the AP Exam. There can be a tendency to rush through this unit because it only accounts for a small percentage of the multiple-choice section of the AP Exam and is near the end of the course. Sufficient time should be devoted to introducing the concepts and providing opportunities for student practice to properly prepare students for factor market questions on the exam. It may also be helpful to teach factor markets as another application of concepts such as supply and demand and marginal analysis so that students can see the connections to previous content and the ways in which factor markets differ. For example, cost minimization by firms works like utility maximization by consumers when you equalize the marginal product per dollar for each input.

UNIT AT A GLANCE

Enduring Understanding	Topic	Suggested Skills	Class Periods ~6–8 CLASS PERIODS
PRD-4	**5.1 Introduction to Factor Markets**	1.A Describe economic concepts, principles, or models.	
	5.2 Changes in Factor Demand and Factor Supply	3.B Determine the effect(s) of one or more changes on other economic markets.	
	5.3 Profit-Maximizing Behavior in Perfectly Competitive Factor Markets	2.C Interpret a specific economic outcome using quantitative data or calculations.	
	5.4 Monopsonistic Markets	2.A Using economic concepts, principles, or models, explain how a specific economic outcome occurs or what action should be taken in order to achieve a specific economic outcome.	
	Go to **AP Classroom** to assign the **Personal Progress Check** for Unit 5. Review the results in class to identify and address any student misunderstandings.		

SAMPLE INSTRUCTIONAL ACTIVITIES

The sample activities on this page are optional and are offered to provide possible ways to incorporate various instructional approaches into the classroom. Teachers do not need to use these activities or instructional approaches and are free to alter or edit them. The examples below were developed in partnership with teachers from the AP community to share ways that they approach teaching some of the topics in this unit. Please refer to the Instructional Approaches section beginning on p. 105 for more examples of activities and strategies.

Activity	Topic	Sample Activity
1	5.1	**Activating Prior Knowledge** Refer students back to the simulation that was carried out in Topic 3.1 in which students acted as producers in a firm to show total product, marginal product, and diminishing marginal returns. Now introduce the price of the output being produced in order for students to calculate the value of the marginal product, also called marginal revenue product or factor demand.
2	5.2	**Graph and Switch** Provide students with a series of scenarios that introduce changes in the determinants of labor demand and labor supply. Have students graph each scenario and then switch papers or whiteboards with a partner to review each other's work.
3	5.3	**Model Questions** After introducing students to the content covered in Topic 5.3, provide an opportunity for students to practice answering previous free-response questions to reinforce their learning (e.g., **2011 AP Exam Question #2**, **2010 AP Exam Question #2**).

Unit Planning Notes

Use the space below to plan your approach to the unit. Consider how you want to pace your course and methods of instruction and assessment.

SUGGESTED SKILL

Principles and Models

1.A

Describe economic concepts, principles, or models.

TOPIC 5.1
Introduction to Factor Markets

Required Course Content

ENDURING UNDERSTANDING

PRD-4

Factor prices provide incentives and convey information to firms and factors of production.

LEARNING OBJECTIVE

PRD-4.A

a. Define (using graphs where appropriate) key terms and concepts relating to factor markets.

b. Explain (using graphs where appropriate) the relationship between factors of production, firms, and factor prices.

c. Calculate (using data from a graph or table where appropriate) the marginal revenue product and marginal resource cost.

ESSENTIAL KNOWLEDGE

PRD-4.A.1

Factors of production (labor, capital, and land) respond to factor prices (wages, interest, and rent), and employers' (firms') decision to hire is based on the productivity of the factors, output price, and cost of the factor.

PRD-4.A.2

The quantity of labor demanded is negatively related to the wage rate, while the quantity of labor supplied is positively related to the wage rate in a given labor market, other things constant.

TOPIC 5.2
Changes in Factor Demand and Factor Supply

SUGGESTED SKILL

Manipulation

3.B

Determine the effect(s) of one or more changes on other economic markets.

Required Course Content

ENDURING UNDERSTANDING

PRD-4

Factor prices provide incentives and convey information to firms and factors of production.

LEARNING OBJECTIVE

PRD-4.B

Explain (using graphs where appropriate) firms' and factors' responses to changes in incentives and constraints.

ESSENTIAL KNOWLEDGE

PRD-4.B.1

Changes in the determinants of labor demand, such as the output price and the productivity of the worker, cause the labor demand curve to shift.

PRD-4.B.2

Changes in the determinants of labor supply (such as immigration, education, working conditions, age distribution, availability of alternative options, preferences for leisure, and cultural expectations) cause the labor supply curve to shift.

SUGGESTED SKILL

Interpretation

2.C

Interpret a specific economic outcome using quantitative data or calculations.

AVAILABLE RESOURCES

- Classroom Resources >
  - Markets—*Product and Factor Markets*
  - Mastering Economic Thinking Skills—*Marginal Thinking: Key Concepts and Questions*

TOPIC 5.3

Profit-Maximizing Behavior in Perfectly Competitive Factor Markets

Required Course Content

ENDURING UNDERSTANDING

PRD-4

Factor prices provide incentives and convey information to firms and factors of production.

LEARNING OBJECTIVE

PRD-4.C

a. Define (using graphs as appropriate) the characteristics of perfectly competitive factor markets.

b. Explain (using graphs where appropriate) the profit-maximizing behavior of firms buying labor (with other inputs fixed) in perfectly competitive markets.

c. Calculate (using data from a graph or table where appropriate) measures representing the profit-maximizing behavior of firms buying labor (with other inputs fixed) in perfectly competitive markets.

ESSENTIAL KNOWLEDGE

PRD-4.C.1

In a perfectly competitive labor market, the wage is set by the market and each firm hires the quantity of workers, where the marginal factor (resource) cost (wage) equals the marginal revenue product of labor. A typical firm may be a perfect competitor in the labor market even if it is an imperfect competitor in its output markets.

PRD-4.C.2

A typical firm hires labor in a perfectly competitive labor market as long as the marginal revenue product of labor is greater than the market wage.

PRD-4.C.3

To minimize costs or maximize profits, firms allocate inputs such that the last dollar spent on each input yields the same amount of marginal product.

LEARNING OBJECTIVE

PRD-4.C

a. Define (using graphs as appropriate) the characteristics of perfectly competitive factor markets.

b. Explain (using graphs where appropriate) the profit-maximizing behavior of firms buying labor (with other inputs fixed) in perfectly competitive markets.

c. Calculate (using data from a graph or table where appropriate) measures representing the profit-maximizing behavior of firms buying labor (with other inputs fixed) in perfectly competitive markets.

ESSENTIAL KNOWLEDGE

PRD-4.C.4

Marginal revenue product of a factor of production is the change in total revenue divided by the change in that factor of production, which is also equal to the marginal physical product of that factor multiplied by the marginal revenue ($MRP = MP \times MR$). Firms in a perfectly competitive output market will have marginal revenue product of labor that is equal to the value of the marginal product of labor ($VMPL = MPL \times P$) because marginal revenue for each unit of output is equal to price.

SUGGESTED SKILL

Interpretation

2.A

Using economic concepts, principles, or models, explain how a specific economic outcome occurs or what action should be taken in order to achieve a specific economic outcome.

TOPIC 5.4
Monopsonistic Markets

Required Course Content

ENDURING UNDERSTANDING

PRD-4

Factor prices provide incentives and convey information to firms and factors of production.

LEARNING OBJECTIVE

PRD-4.D

a. Define (using graphs as appropriate) the characteristics of monopsonistic markets.
b. Explain (using graphs where appropriate) the profit-maximizing behavior of firms buying labor (with other inputs fixed) in monopsonistic markets.
c. Calculate (using data from a graph or table where appropriate) measures representing the profit-maximizing behavior of firms buying labor (with other inputs fixed) in monopsonistic markets.

ESSENTIAL KNOWLEDGE

PRD-4.D.1

In a monopsonistic labor market, a typical firm hires additional labor as long as the marginal revenue product is greater than the marginal factor (resource) cost (the wage of a new unit of labor plus the wage increase given to all existing labor).

PRD-4.D.2

When a typical firm hires additional workers in a monopsonistic labor market, the marginal factor (resource) cost is greater than the supply price of labor.

AP MICROECONOMICS

UNIT 6

Market Failure and the Role of Government

8–13%
AP EXAM WEIGHTING

~9–11
CLASS PERIODS

UNIT 6

8–13% AP EXAM WEIGHTING | **~9–11** CLASS PERIODS

Market Failure and the Role of Government

BIG IDEA 4
Market Inefficiency and Public Policy POL

- How do markets fail?
- What role should the government play in markets?

Developing Understanding

This unit prepares students to understand the theoretical arguments for and against government intervention in markets and therefore has important public policy applications. Students will examine the conditions under which markets may fail and the effectiveness of government policies that are designed to correct market failures. In exploring the idea of market failures and government interventions to correct them, students will build on their understanding of efficiency and what it means for a firm to produce the socially optimal quantity or not. Students will also learn about how inequality is measured and the sources of income and wealth inequality.

Building Course Skills

1.A 1.B 2.A 4.B 4.C

Students will have had multiple opportunities to practice the course skills by this point in the course. This unit provides various opportunities to engage students in identifying economic concepts and principles, interpreting given outcomes, and predicting and explaining the effects of economic situations using real-world examples that are relevant to their lives and role as citizens in a democratic republic.

Continue to appropriately model and provide opportunities for students to practice graphing economic situations and the effects of changes in economic situations. This is particularly important in the context of graphing externalities and the effects of government intervention, which are frequent challenge areas for students on the AP Exam.

Preparing for the AP Exam

As in Unit 5, the topics addressed in this unit (namely, externalities and the effects of government intervention in different market structures) appear in some of the most frequently missed questions on the AP Exam. Again, there may be an inclination to rush through this unit since overall it accounts for only a small percentage of the multiple-choice questions on the AP Exam and is at the very end of the course when there may be limited time left before the exam. However, it is important to prepare students to answer questions about positive and negative externalities, deadweight loss, and government interventions.

UNIT AT A GLANCE

Enduring Understanding	Topic	Suggested Skills	Class Periods
			~9–11 CLASS PERIODS
POL-2	**6.1 Socially Efficient and Inefficient Market Outcomes**	2.A Using economic concepts, principles, or models, explain how a specific economic outcome occurs or what action should be taken in order to achieve a specific economic outcome.	
POL-3	**6.2 Externalities**	4.B Demonstrate your understanding of a specific economic situation on an accurately labeled graph or visual.	
	6.3 Public and Private Goods	1.B Identify an economic concept, principle, or model illustrated by an example.	
POL-4	**6.4 The Effects of Government Intervention in Different Market Structures**	4.C Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.	
POL-5	**6.5 Inequality**	1.A Describe economic concepts, principles, or models.	

Go to **AP Classroom** to assign the **Personal Progress Check** for Unit 6. Review the results in class to identify and address any student misunderstandings.

SAMPLE INSTRUCTIONAL ACTIVITIES

The sample activities on this page are optional and are offered to provide possible ways to incorporate various instructional approaches into the classroom. Teachers do not need to use these activities or instructional approaches and are free to alter or edit them. The examples below were developed in partnership with teachers from the AP community to share ways that they approach teaching some of the topics in this unit. Please refer to the Instructional Approaches section beginning on p. 105 for more examples of activities and strategies.

Activity	Topic	Sample Activity
1	6.2	**Response Groups** Working in small groups, provide students with examples of situations that describe either a negative or positive externality. Give each group a different situation. Each group should identify the externality, graph the market failure indicating the deadweight loss, and then offer solutions to correct the situation. A presenter from each group will demonstrate the findings for the class.
2	6.3	**Socratic Seminar** Tell students a true or fictional story of a public good problem. For example, explain that you live on a lake that is no longer safe for swimming because of an algae bloom. Provide pictures and compelling details. Engage students in a classroom discussion to determine how and why a private market could or could not solve this problem. Challenge students to propose a cost-effective solution.
3	6.4	**Practice Modeling** First, demonstrate to students how to graphically model the effect of a government policy action in the context of a specific market structure. Then change the scenario by considering a different action or market structure. Provide an opportunity for students to practice generating the graph with appropriate labels. Allow students to provide feedback to one another and circle the room to clarify questions and misunderstandings.

Unit Planning Notes

Use the space below to plan your approach to the unit. Consider how you want to pace your course and methods of instruction and assessment.

SUGGESTED SKILL

Interpretation

2.A

Using economic concepts, principles, or models, explain how a specific economic outcome occurs, or what action should be taken in order to achieve a specific economic outcome.

TOPIC 6.1
Socially Efficient and Inefficient Market Outcomes

Required Course Content

ENDURING UNDERSTANDING

POL-2

Perfectly competitive markets allocate resources efficiently, but imperfect competition often results in market inefficiencies.

LEARNING OBJECTIVE	ESSENTIAL KNOWLEDGE
POL-2.A a. Define social efficiency. b. Explain (using graphs where appropriate) why resource allocation in perfectly competitive markets is socially efficient.	**POL-2.A.1** The optimal quantity of a good occurs where the marginal benefit of consuming the last unit equals the marginal cost of producing that last unit, thus maximizing total economic surplus. **POL-2.A.2** The market equilibrium quantity is equal to the socially optimal quantity only when all social benefits and costs are internalized by individuals in the market. Total economic surplus is maximized at that quantity. [See also PRD-3 and POL-3.]
Explain (using graphs where appropriate) how private incentives can lead to actions by rational agents that are socially undesirable (inefficient) market outcomes.	**POL-2.B.1** Rational agents can pursue private actions to exploit or exercise market characteristics known as market power. **POL-2.B.2** Rational agents make optimal decisions by equating private marginal benefits and private marginal costs that can result in market inefficiencies.

continued on next page

LEARNING OBJECTIVE	ESSENTIAL KNOWLEDGE
POL-2.B Explain (using graphs where appropriate) how private incentives can lead to actions by rational agents that are socially undesirable (inefficient) market outcomes.	**POL-2.B.3** Policymakers use cost-benefit analysis to evaluate different actions to reduce or eliminate market inefficiencies. **POL-2.B.4** Market inefficiencies can be eliminated by designing policies that equate marginal social benefit with marginal social cost.
POL-2.C a. Explain equilibrium allocations in imperfect markets relative to efficient allocations (using graphs where appropriate) and why these markets are inefficient. b. Calculate (using graphs where appropriate) the deadweight loss resulting from the production of a non-efficient quantity.	**POL-2.C.1** Equilibrium allocations can deviate from efficient allocations due to situations such as monopoly; oligopoly; monopolistic competition; negative and positive externalities in production or consumption; asymmetric information; and insufficient production of public goods. **POL-2.C.2** Producing any non-efficient quantity results in deadweight loss.

SUGGESTED SKILL

Graphing and Visuals

4.B

Demonstrate your understanding of a specific economic situation on an accurately labeled graph or visual.

AVAILABLE RESOURCE

- Classroom Resources > **Mastering Economic Thinking Skills—*Marginal Thinking: Key Concepts and Questions***

TOPIC 6.2
Externalities

Required Course Content

ENDURING UNDERSTANDING

POL-3

Private incentives can fail to account for all socially relevant considerations.

LEARNING OBJECTIVE

POL-3.A

a. Define externalities.

b. Explain (using graphs where appropriate) how in the presence of externalities, private markets do not take into consideration social costs or social benefits.

ESSENTIAL KNOWLEDGE

POL-3.A.1

The socially optimal quantity of a good occurs where the marginal social benefit of consuming the last unit equals the marginal social cost of producing that last unit, thus maximizing total economic surplus.

POL-3.A.2

Externalities are either positive or negative and arise from lack of well-defined property rights and/or high transaction costs.

POL-3.A.3

In the presence of externalities, rational agents respond to private costs and benefits and not to external costs and benefits.

POL-3.A.4

Rational agents have the incentive to free ride when a good is non-excludable.

POL-3.B

Explain (using graphs where appropriate) how public policies address positive or negative externalities.

POL-3.B.1

Policies that address positive or negative externalities include taxes/subsidies, environmental regulation, public provision, the assignment of property rights, and the reassignment of property rights through private transactions.

TOPIC 6.3
Public and Private Goods

SUGGESTED SKILL

Principles and Models

1.B

Identify an economic concept, principle, or model illustrated by an example.

Required Course Content

ENDURING UNDERSTANDING

POL-3

Private incentives can fail to account for all socially relevant considerations.

LEARNING OBJECTIVE

POL-3.C

a. Define whether goods are rival and/or excludable.

b. Explain how the nature of rival and/or excludable goods influences the behavior of individuals and groups.

ESSENTIAL KNOWLEDGE

POL-3.C.1

Private goods are rival and excludable, and public goods are non-rival and non-excludable.

POL-3.C.2

Due to the free rider problem, private individuals usually lack the incentive to produce public goods, leaving government as the only producer.

POL-3.C.3

Governments sometimes choose to produce private goods, such as educational services, and to allow free access to them.

POL-3.C.4

Some natural resources are, by their nature, non-excludable and rival and therefore open access. Private individuals inefficiently overconsume such resources.

SUGGESTED SKILL

Graphing and Visuals

4.C

Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.

TOPIC 6.4
The Effects of Government Intervention in Different Market Structures

Required Course Content

ENDURING UNDERSTANDING

POL-4

In imperfect markets, well-designed government policy can reduce waste.

LEARNING OBJECTIVE

POL-4.A

a. Define government policy interventions in imperfect markets.

b. Explain (using graphs where appropriate) how government policies can alter market outcomes in perfectly and imperfectly competitive markets.

c. Calculate (using data from a graph or table as appropriate) changes in market outcomes resulting from government policies in perfectly competitive and imperfectly competitive markets.

ESSENTIAL KNOWLEDGE

POL-4.A.1

Per-unit taxes and subsidies affect the total price consumers pay, net price firms receive, equilibrium quantity, consumer and producer surpluses, deadweight loss, and government revenue or cost. The impact of change depends on the price elasticity of demand and supply.

POL-4.A.2

Lump-sum taxes and lump-sum subsidies do not change either marginal cost or marginal benefit; only fixed costs will be affected.

POL-4.A.3

Binding price ceilings and floors affect prices and quantities differently depending on the market structures (perfect competition, monopoly, monopolistic competition, and monopsony) and the price elasticities of supply and demand.

continued on next page

LEARNING OBJECTIVE

POL-4.A

a. Define government policy interventions in imperfect markets.
b. Explain (using graphs where appropriate) how government policies can alter market outcomes in perfectly and imperfectly competitive markets.
c. Calculate (using data from a graph or table as appropriate) changes in market outcomes resulting from government policies in perfectly competitive and imperfectly competitive markets.

ESSENTIAL KNOWLEDGE

POL-4.A.4

Government intervention in imperfect markets can increase efficiency if the policy correctly addresses the incentives that led to the market failure.

POL-4.A.5

Government can use price regulation to address inefficiency due to monopoly.

POL-4.A.6

A natural monopoly will require a lump-sum subsidy to produce at the allocatively efficient quantity.

POL-4.A.7

Governments use antitrust policy in an attempt to make markets more competitive.

Exclusion:
A graph of inefficiency and policy due to collusion is beyond the scope of the course and the AP Exam.

SUGGESTED SKILL

Principles and Models

1.A

Describe economic concepts, principles, or models.

TOPIC 6.5
Inequality

Required Course Content

ENDURING UNDERSTANDING

POL-5

Market outcomes can result in income inequality.

LEARNING OBJECTIVE	ESSENTIAL KNOWLEDGE
POL-5.A Define measures of economic inequality in income and wealth.	POL-5.A.1 Income levels and poverty rates vary greatly both across and within groups (e.g., age, gender, race) and countries. POL-5.A.2 The Lorenz curve and Gini coefficient are used to represent the degree of inequality in distributions and to compare distributions across different countries, policies, or time periods. **X Exclusion:** Drawing the Lorenz curve and calculating Gini coefficients are beyond the scope of the course and the AP Exam.
POL-5.B Explain sources of income and wealth inequality.	POL-5.B.1 Each factor of production receives the value of its marginal product, which can contribute to income inequality. POL-5.B.2: Sources of income and wealth inequality include differences in tax structures (progressive and regressive tax structures), human capital, social capital, inheritance, effects of discrimination, access to financial markets, mobility, and bargaining power within economic and social units (firms, labor unions, and families).

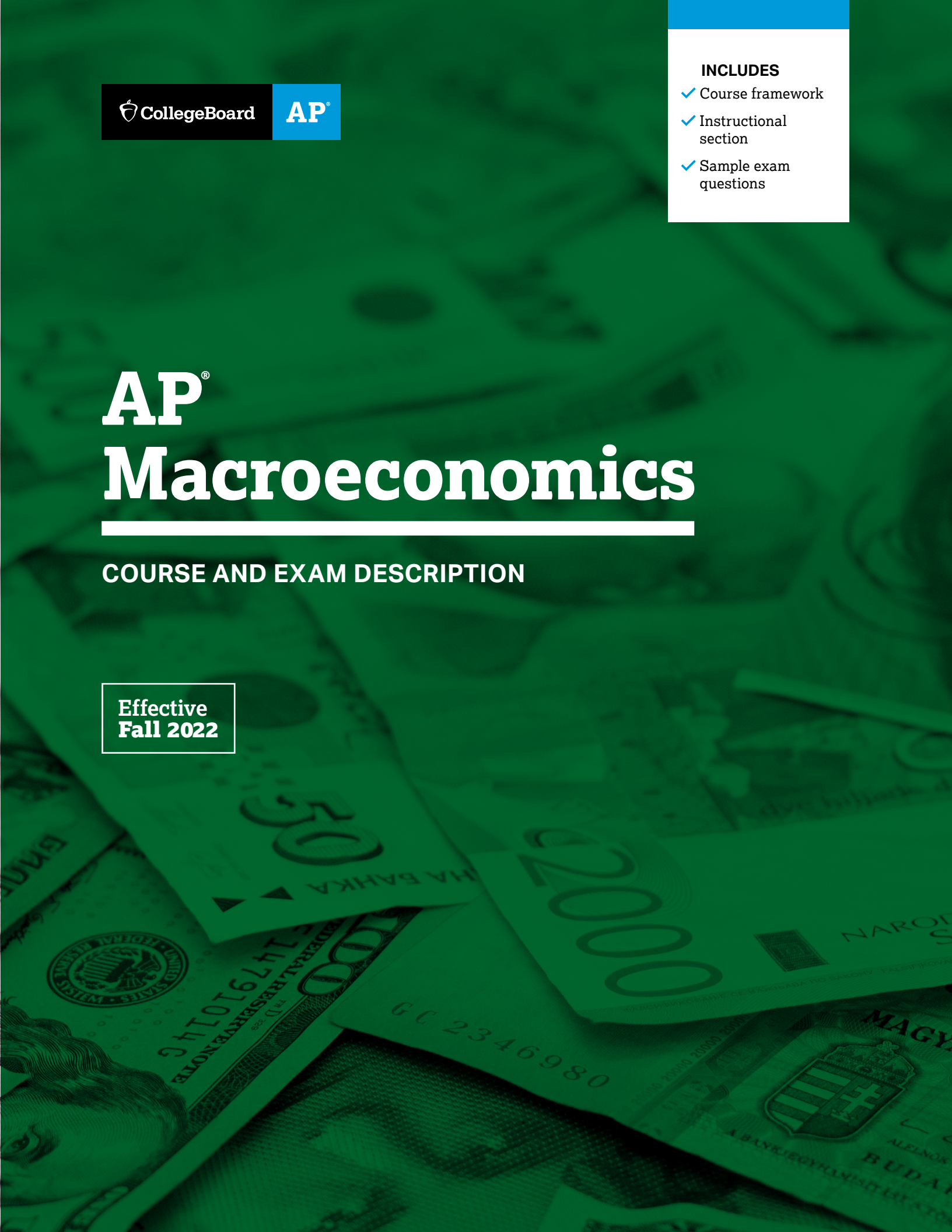
CollegeBoard AP

INCLUDES
- Course framework
- Instructional section
- Sample exam questions

AP® Macroeconomics

COURSE AND EXAM DESCRIPTION

Effective **Fall 2022**



AP® Macroeconomics

COURSE AND EXAM DESCRIPTION

Effective
Fall 2022

AP COURSE AND EXAM DESCRIPTIONS ARE UPDATED PERIODICALLY
Please visit AP Central (apcentral.collegeboard.org) to determine whether a more recent course and exam description is available.

AP MACROECONOMICS

Course Framework

Introduction

The AP Macroeconomics course outlined in this framework reflects a commitment to what economics teachers, professors, and researchers have agreed is the main goal of a college-level macroeconomics course: to introduce students to the principles that apply to an economic system as a whole.

The *AP Macroeconomics Course and Exam Description* defines concepts, skills, and understandings required by representative colleges and universities for granting college credit or placement. The course prepares students to think like economists by using principles and models to describe economic situations and predict and explain outcomes. Like economists, students do so by using graphs, charts, and data.

Although the course framework is designed to provide a clear and detailed description of the course content and skills, it is not a curriculum. A college-level textbook that covers required course content should be used, and teachers create their own curricula to meet the needs of their students and any state or local requirements.

Course Framework Components

Overview

This course framework provides a clear and detailed description of the course requirements necessary for student success.

The course framework includes two essential components:

1 COURSE SKILLS

The course skills are central to the study and practice of economics. Students should develop and apply the described skills on a regular basis over the span of the course.

2 COURSE CONTENT

The course content is organized into commonly taught units of study that provide a suggested sequence for the course. These units comprise the content and conceptual understandings that colleges and universities typically expect students to master to qualify for college credit and/or placement. This content is grounded in big ideas, which are cross-cutting concepts that build conceptual understanding and spiral throughout the course.

1

AP MACROECONOMICS

Course Skills

The AP Economics skills describe what a student should be able to do while exploring course concepts. The table that follows presents these skills, which students should develop during the AP Macroeconomics and AP Microeconomics courses. These skills form the basis of the tasks on the AP Exam.

The unit guides later in this publication embed and spiral these skills throughout the course, providing teachers with one way to integrate the skills in the course content with sufficient repetition to prepare students to transfer those skills when taking the AP Exam. Course content may be paired with a variety of skills on the AP Exam.

More detailed information about teaching the course skills can be found in the Instructional Approaches section of this publication.

AP MACROECONOMICS

AP Economics Skills

Skill Category 1	Skill Category 2	Skill Category 3	Skill Category 4
Principles and Models 1 Define economic principles and models.	***Interpretation*** 2 Explain given economic outcomes.	***Manipulation*** 3 Determine outcomes of specific economic situations.	***Graphing and Visuals*** 4 Model economic situations using graphs or visual representations.

SKILLS

1.A Describe economic concepts, principles, or models.

1.B Identify an economic concept, principle, or model illustrated by an example.

1.C Identify an economic concept, principle, or model using quantitative data or calculations.

1.D Describe the similarities, differences, and limitations of economic concepts, principles, or models.

2.A Using economic concepts, principles, or models, explain how a specific economic outcome occurs or what action should be taken in order to achieve a specific economic outcome.

2.B Using economic concepts, principles, or models, explain how a specific economic outcome occurs when there are multiple contributing variables or what multiple actions should be taken in order to achieve a specific economic outcome.

2.C Interpret a specific economic outcome using quantitative data or calculations.

3.A Determine the outcome of an economic situation using economic concepts, principles, or models.

3.B Determine the effect(s) of one or more changes on other economic markets.

3.C Determine the effect(s) of a change in an economic situation using quantitative data or calculations.

4.A Draw an accurately labeled graph or visual to represent an economic model or market.

4.B Demonstrate your understanding of a specific economic situation on an accurately labeled graph or visual.

4.C Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.

2

AP MACROECONOMICS

Course Content

Based on the Understanding by Design® (Wiggins and McTighe) model, this course framework provides a clear and detailed description of the course requirements necessary for student success. The framework specifies what students must know, be able to do, and understand, with a focus on big ideas that encompass core principles and theories of the discipline. The framework also encourages instruction that prepares students for advanced economics coursework.

Big Ideas

The big ideas serve as the foundation of the course and allow students to create meaningful connections among concepts. They are often overarching concepts or themes that become threads that run throughout the course. Revisiting the big ideas and applying them in a variety of contexts allows students to develop deeper conceptual understanding. Below are the big ideas of the course and a brief description of each:

BIG IDEA 1: ECONOMIC MEASUREMENTS (MEA)

Economists construct measurements to monitor the state of an economy and evaluate its performance over time. Governments, firms, and citizens often use these measurements to help inform policy, business, and personal decisions.

BIG IDEA 2: MARKETS (MKT)

Competitive markets bring together buyers and sellers to exchange goods and services for mutual gain. The simple model of supply–demand can be applied in different market contexts.

BIG IDEA 3: MACROECONOMIC MODELS (MOD)

Macroeconomic models are simplified representations that depict basic economic relationships and can be used to predict and explain how those relationships are affected by economic shocks.

BIG IDEA 4: MACROECONOMIC POLICIES (POL)

Government taxation and spending policies and central bank monetary policy can affect an economy's output, price level, and level of employment, both in the short run and in the long run.

UNITS

The course content is organized into commonly taught units. The units have been arranged in a logical sequence frequently found in many college courses and textbooks.

The six units in AP Macroeconomics and their weighting on the multiple-choice section of the AP Exam are listed below.

Pacing recommendations at the unit level and on the Course at a Glance provide suggestions for how to teach the required course content and administer the Personal Progress Checks. The suggested class periods are based on a schedule in which the class meets five days a week for 45 minutes each day, with the assumption that there are approximately 70 instructional days per semester. While these recommendations have been made to aid planning, teachers should of course adjust the pacing based on the needs of their students, alternate schedules (e.g., block scheduling), or their school's academic calendar.

TOPICS

Each unit is broken down into teachable segments called topics. The topic pages (starting on page 34) contain the required content for each topic.

Units	Exam Weighting
Unit 1: Basic Economic Concepts	**5–10%**
Unit 2: Economic Indicators and the Business Cycle	**12–17%**
Unit 3: National Income and Price Determination	**17–27%**
Unit 4: Financial Sector	**18–23%**
Unit 5: Long-Run Consequences of Stabilization Policies	**20–30%**
Unit 6: Open Economy—International Trade and Finance	**10–13%**

Spiraling the Big Ideas

The following table shows how the big ideas spiral across units.

Big Ideas	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
	Basic Economic Concepts	*Economic Indicators and the Business Cycle*	*National Income and Price Determination*	*Financial Sector*	*Long-Run Consequences of Stabilization Policies*	*Open Economy—International Trade and Finance*
Economic Measurements **MEA**		✓		✓	✓	✓
Markets **MKT**	✓			✓		✓
Macroeconomic Models **MOD**	✓		✓		✓	
Macroeconomic Policies **POL**			✓	✓	✓	

Course at a Glance

Plan

The Course at a Glance provides a useful visual organization of the AP Macroeconomics curricular components, including:

- Sequence of units, along with approximate weighting and suggested pacing. Please note, pacing is based on 45-minute class periods, meeting five days each week for a full academic semester.
- Progression of topics within each unit.
- Spiraling of the big ideas and skills across units.

Teach

SKILL CATEGORIES
Skill categories spiral throughout the course.

- 1 Principles and Models
- 2 Interpretation
- 3 Manipulation
- 4 Graphing and Visuals

BIG IDEAS
Big ideas spiral across topics and units.

- MEA Economic Measurements
- MOD Macroeconomic Models
- MKT Markets
- POL Macroeconomic Policies

Assess

Assign the Personal Progress Checks—either as homework or in class—for each unit. Each Personal Progress Check contains formative multiple-choice and free-response questions. The feedback from the Personal Progress Checks shows students the areas where they need to focus.

UNIT 1 Basic Economic Concepts

~8–10 Class Periods | **5–10%** AP Exam Weighting

MOD 1	1.1	Scarcity
MOD 4	1.2	Opportunity Cost and the Production Possibilities Curve (PPC)
MKT 1	1.3	Comparative Advantage and Gains from Trade
MKT 4	1.4	Demand
MKT 4	1.5	Supply
MKT 4	1.6	Market Equilibrium, Disequilibrium, and Changes in Equilibrium

Personal Progress Check 1
Multiple-choice: ~20 questions
Free-response: 2 questions
- Short
- Short

UNIT 2 Economic Indicators and the Business Cycle

~9–11 Class Periods | **12–17%** AP Exam Weighting

MEA 1	2.1	The Circular Flow and GDP
MEA 1	2.2	Limitations of GDP
MEA 1	2.3	Unemployment
MEA 2	2.4	Price Indices and Inflation
MEA 3	2.5	Costs of Inflation
MEA 1	2.6	Real v. Nominal GDP
MEA 1	2.7	Business Cycles

Personal Progress Check 2
Multiple-choice: ~20 questions
Free-response: 2 questions
- Short
- Short

UNIT 3 National Income and Price Determination

~10–12 Class Periods | **17–27%** AP Exam Weighting

MOD 4	**3.1** Aggregate Demand (AD)
MOD 3	**3.2** Multipliers
MOD 4	**3.3** Short-Run Aggregate Supply (SRAS)
MOD 1	**3.4** Long-Run Aggregate Supply (LRAS)
MOD 4	**3.5** Equilibrium in the Aggregate Demand–Aggregate Supply (AD–AS) Model
MOD 4	**3.6** Changes in the AD–AS Model in the Short Run
MOD 3	**3.7** Long-Run Self-Adjustment
POL 2	**3.8** Fiscal Policy
POL 1	**3.9** Automatic Stabilizers

Personal Progress Check 3

Multiple-choice: ~25 questions
Free-response: 2 questions
- Short
- Short

UNIT 4 Financial Sector

~11–13 Class Periods | **18–23%** AP Exam Weighting

MEA 1	**4.1** Financial Assets
MEA 1	**4.2** Nominal v. Real Interest Rates
MEA 1	**4.3** Definition, Measurement, and Functions of Money
POL 3	**4.4** Banking and the Expansion of the Money Supply
MKT 4	**4.5** The Money Market
POL 2	**4.6** Monetary Policy
MKT 4	**4.7** The Loanable Funds Market

Personal Progress Check 4

Multiple-choice: ~20 questions
Free-response: 2 questions
- Short
- Short

UNIT 5 Long-Run Consequences of Stabilization Policies

~8–10 Class Periods | **20–30%** AP Exam Weighting

POL 2	**5.1** Fiscal and Monetary Policy Actions in the Short Run
MOD 4	**5.2** The Phillips Curve
POL 3	**5.3** Money Growth and Inflation
POL 3	**5.4** Government Deficits and the National Debt
POL 3	**5.5** Crowding Out
MEA MOD 2	**5.6** Economic Growth
POL 2	**5.7** Public Policy and Economic Growth

Personal Progress Check 5

Multiple-choice: ~20 questions
Free-response: 1 question
- Long

UNIT 6 Open Economy—International Trade and Finance

~5–7 Class Periods | 10–13% AP Exam Weighting

MEA 1	6.1	Balance of Payments Accounts
MKT 1	6.2	Exchange Rates
MKT 4	6.3	The Foreign Exchange Market
MKT 4	6.4	Effect of Changes in Policies and Economic Conditions on the Foreign Exchange Market
MKT 3	6.5	Changes in the Foreign Exchange Market and Net Exports
MKT 3	6.6	Real Interest Rates and International Capital Flows

Personal Progress Check 6

Multiple-choice: ~20 questions
Free-response: 1 question
- Long

AP MACROECONOMICS

Unit Guides

Introduction

Designed with input from the community of AP Macroeconomics educators, the unit guides offer teachers helpful guidance in building students' skills and knowledge. The suggested sequence was identified through a thorough analysis of the syllabi of highly effective AP teachers and the organization of commonly assigned classroom resources.

This unit structure respects new AP teachers' time by providing one possible sequence they can adopt or modify rather than having to build from scratch. An additional benefit is that these units enable the AP Program to provide interested teachers with formative assessments—the Personal Progress Checks—that they can assign their students at the end of each unit to gauge progress toward success on the AP Exam. However, experienced AP teachers who are satisfied with their current course organization and exam results should feel no pressure to adopt these units, which comprise an optional sequence for this course.

Using the Unit Guides

UNIT 1 | 5–10% AP EXAM WEIGHTING | ~8–10 CLASS PERIODS

Basic Economic Concepts

BIG IDEA 2
Markets MKT
- Why do people and countries trade with one another?
- What determines the market price for a good or service?

BIG IDEA 3
Macroeconomic Models MOD
- Why is there no such thing as a free lunch?

Developing Understanding

To understand economics, students must first understand that because most resources are scarce, individuals and societies must make choices. Examining how and why these choices are made will help students begin to understand the principles of supply and demand along with the importance of specialization and exchange.

In addition to introducing these basic economic concepts, this unit introduces foundational models that set the stage for more advanced economic analysis in subsequent units.

Building Course Skills

1.A 1.C 4.A 4.C

This unit focuses on giving students a thorough understanding of basic economic concepts so that they can appropriately apply these concepts with increasing sophistication in subsequent units. Application of economic principles and models will be an important skill throughout the course. Many students have not had significant exposure to the study of economics in previous coursework, so employing the tools of an economist may not come naturally. With that in mind, it's important to give students many opportunities, starting early in the course, to describe economic concepts and apply their understanding of those concepts graphically and numerically. It helps for students to see from the beginning of the course how graphs can be used as tools for making sense of economic situations and predicting and explaining economic outcomes; even if a graph is not asked for on the exam, drawing one may help students answer a given question or explain a situation.

Preparing for the AP Exam

Many students lose points on the free-response section of the AP Exam for failing to properly label all the elements of a graph and demonstrate the effects of changes on graphs. When introducing students to graphing in this unit, first model how to set up graphs, emphasizing the importance of properly labeling axes, curves, and equilibrium points. Give students opportunities to practice setting up graphs and demonstrating the effects of changes on their graphs. It is important to continue to emphasize and appropriately model these skills throughout the course.

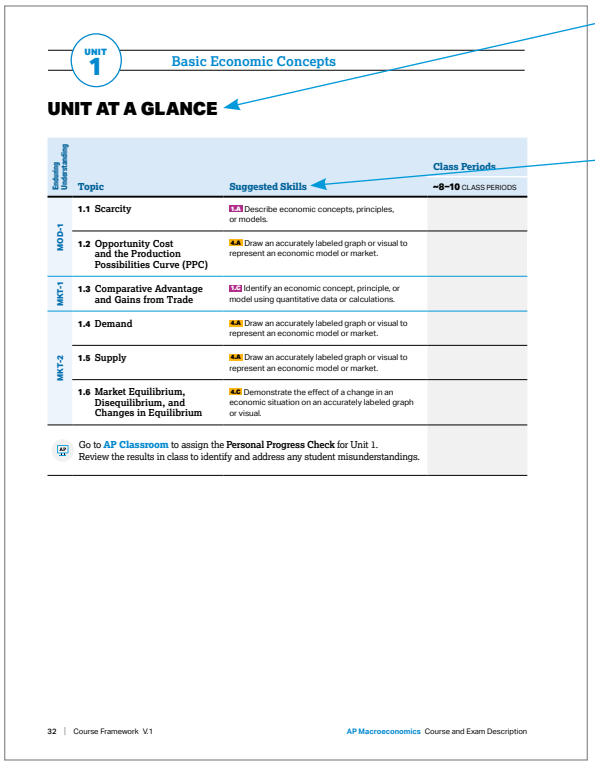
Another challenging concept for students is differentiating between movement along a curve and shifts of a curve. In the context of learning about the basic model of supply and demand in this unit, consider spending time helping students distinguish between the effects of a price change and changes in the determinants of supply and demand. This will help students apply this understanding in other market models that come later in the course.

Developing Understanding provides an overview that contextualizes and situates the key content of the unit within the scope of the course.

Big ideas serve as the foundation of the course and develop understanding as they spiral throughout the course. The **essential questions** are thought-provoking questions that motivate students and inspire inquiry.

Building Course Skills describes specific aspects of the skills that are appropriate to focus on in that unit.

Preparing for the AP Exam provides helpful tips and common student misunderstandings identified from prior exam data.



UNIT 1 | Basic Economic Concepts

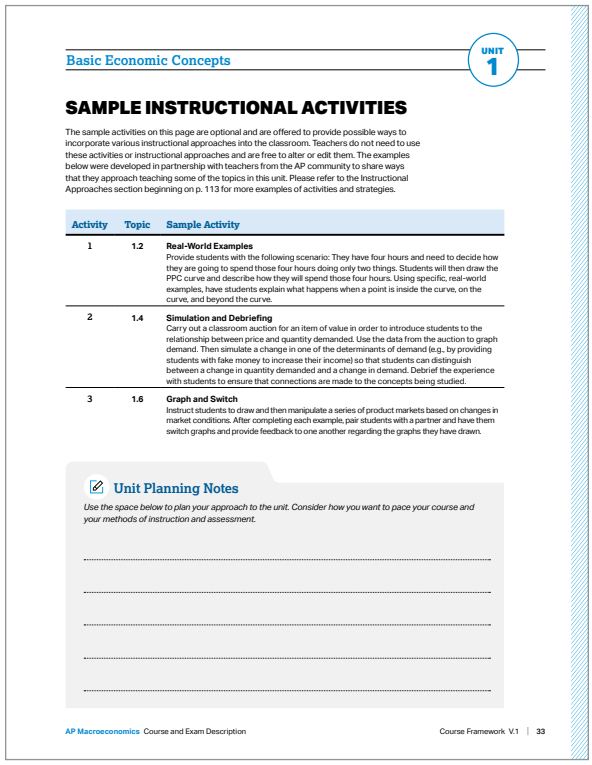
UNIT AT A GLANCE

Enduring Understanding	Topic	Suggested Skills	Class Periods ~8–10 CLASS PERIODS
MOD-1	1.1 Scarcity	1.A Describe economic concepts, principles, or models.	
	1.2 Opportunity Cost and the Production Possibilities Curve (PPC)	4.A Draw an accurately labeled graph or visual to represent an economic model or market.	
MKT-1	1.3 Comparative Advantage and Gains from Trade	1.C Identify an economic concept, principle, or model using quantitative data or calculations.	
MKT-2	1.4 Demand	4.A Draw an accurately labeled graph or visual to represent an economic model or market.	
	1.5 Supply	4.A Draw an accurately labeled graph or visual to represent an economic model or market.	
	1.6 Market Equilibrium, Disequilibrium, and Changes in Equilibrium	4.C Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.	
	Go to AP Classroom to assign the **Personal Progress Check** for Unit 1. Review the results in class to identify and address any student misunderstandings.		

The **Unit at a Glance table** shows the topics, related enduring understandings, and suggested skills. The "class periods" column has been left blank so that teachers can customize the time they spend on each topic.

The **suggested skill** for each topic shows one way to link the content in that topic to a specific AP Economics skill. The individual skill has been thoughtfully chosen in a way that allows teachers to spiral the skill throughout the course. Students should be able to use multiple skills with each topic, so the suggested skill is not meant to imply an exclusion of other skills.

Using the Unit Guides



Basic Economic Concepts

UNIT 1

SAMPLE INSTRUCTIONAL ACTIVITIES

The sample activities on this page are optional and are offered to provide possible ways to incorporate various instructional approaches into the classroom. Teachers do not need to use these activities or instructional approaches and are free to alter or edit them. The examples below were developed in partnership with teachers from the AP community to share ways that they approach teaching some of the topics in this unit. Please refer to the Instructional Approaches section beginning on p. 113 for more examples of activities and strategies.

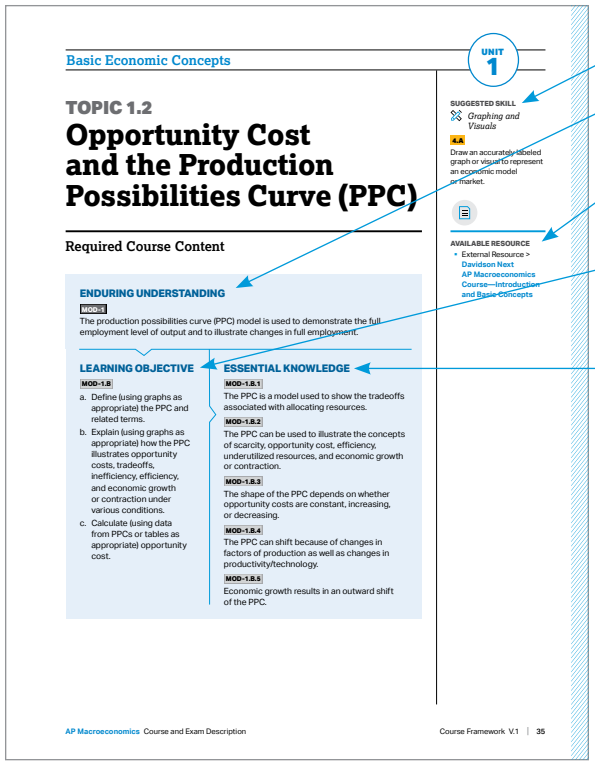
Activity	Topic	Sample Activity
1	1.2	**Real-World Examples** Provide students with the following scenario: They have four hours and need to decide how they are going to spend those four hours doing only two things. Students will then draw the PPC curve and describe how they will spend those four hours. Using specific, real-world examples, have students explain what happens when a point is inside the curve, on the curve, and beyond the curve.
2	1.4	**Simulation and Debriefing** Carry out a classroom auction for an item of value in order to introduce students to the relationship between price and quantity demanded. Use the data from the auction to graph demand. Then simulate a change in one of the determinants of demand (e.g., by providing students with fake money to increase their income) so that students can distinguish between a change in quantity demanded and a change in demand. Debrief the experience with students to ensure that connections are made to the concepts being studied.
3	1.6	**Graph and Switch** Instruct students to draw and then manipulate a series of product markets based on changes in market conditions. After completing each example, pair students with a partner and have them switch graphs and provide feedback to one another regarding the graphs they have drawn.

Unit Planning Notes

Use the space below to plan your approach to the unit. Consider how you want to pace your course and your methods of instruction and assessment.

AP Macroeconomics Course and Exam Description Course Framework V.1 | 33

The **Sample Instructional Activities** page includes optional activities that can help tie together the content and skills of a particular topic. Additionally, this page offers space for teachers to make notes on their approach to the individual topics and the unit as a whole.



Basic Economic Concepts

UNIT 1

TOPIC 1.2

Opportunity Cost and the Production Possibilities Curve (PPC)

Required Course Content

ENDURING UNDERSTANDING

MOD-1

The production possibilities curve (PPC) model is used to demonstrate the full employment level of output and to illustrate changes in full employment.

LEARNING OBJECTIVE

MOD-1.B

a. Define (using graphs as appropriate) the PPC and related terms.

b. Explain (using graphs as appropriate) how the PPC illustrates opportunity costs, tradeoffs, inefficiency, efficiency, and economic growth or contraction under various conditions.

c. Calculate (using data from PPCs or tables as appropriate) opportunity cost.

ESSENTIAL KNOWLEDGE

MOD-1.B.1
The PPC is a model used to show the tradeoffs associated with allocating resources.

MOD-1.B.2
The PPC can be used to illustrate the concepts of scarcity, opportunity cost, efficiency, underutilized resources, and economic growth or contraction.

MOD-1.B.3
The shape of the PPC depends on whether opportunity costs are constant, increasing, or decreasing.

MOD-1.B.4
The PPC can shift because of changes in factors of production as well as changes in productivity/technology.

MOD-1.B.5
Economic growth results in an outward shift of the PPC.

SUGGESTED SKILL

Graphing and Visuals

4.A

Draw an accurately labeled graph or visual to represent an economic model or market.

AVAILABLE RESOURCE

- External Resource > Davidson Next AP Macroeconomics Course—Introduction and Basic Concepts

AP Macroeconomics Course and Exam Description Course Framework V.1 | 35

TOPIC PAGES

The **suggested skill** offers a possible skill to pair with the topic.

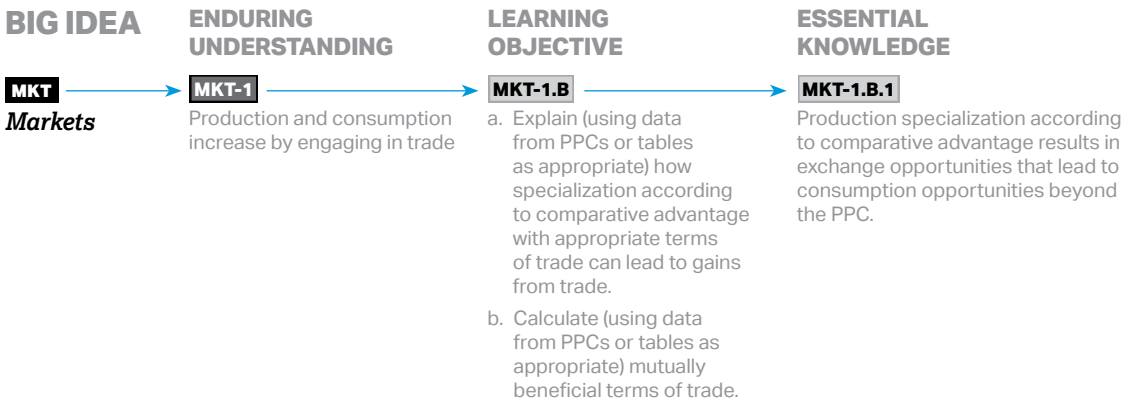
Enduring understandings are the long-term takeaways related to the big ideas that leave a lasting impression on students.

Where possible, **available resources** are listed that might help teachers address a particular topic in their classroom.

Learning objectives define what a student should be able to do with content knowledge in order to progress toward the enduring understandings.

Essential knowledge statements describe the knowledge required to perform the learning objective.

REQUIRED COURSE CONTENT LABELING SYSTEM



NOTE: Labels are used to distinguish each unique element of the required course content and are used throughout this course and exam description. Additionally, they are used in the AP Question Bank and other resources found in AP Classroom. Enduring understandings are labeled sequentially according to the big idea that they are related to. Learning objectives are labeled to correspond with the enduring understanding they relate to. Finally, essential knowledge statements are labeled to correspond with the learning objective they relate to.

AP MACROECONOMICS

UNIT 1

Basic Economic Concepts

5–10%
AP EXAM WEIGHTING

~8–10
CLASS PERIODS

UNIT 1

5–10% AP EXAM WEIGHTING | **~8–10** CLASS PERIODS

Basic Economic Concepts

BIG IDEA 2
Markets MKT
- Why do people and countries trade with one another?
- What determines the market price for a good or service?

BIG IDEA 3
Macroeconomic Models MOD
- Why is there no such thing as a free lunch?

Developing Understanding

To understand economics, students must first understand that because most resources are scarce, individuals and societies must make choices. Examining how and why these choices are made will help students begin to understand the principles of supply and demand along with the importance of specialization and exchange.

In addition to introducing these basic economic concepts, this unit introduces foundational models that set the stage for more advanced economic analysis in subsequent units.

Building Course Skills

1.A 1.C 4.A 4.C

This unit focuses on giving students a thorough understanding of basic economic concepts so that they can appropriately apply these concepts with increasing sophistication in subsequent units. Application of economic principles and models will be an important skill throughout the course. Many students have not had significant exposure to the study of economics in previous coursework, so employing the tools of an economist may not come naturally. With that in mind, it's important to give students many opportunities, starting early in the course, to describe economic concepts and apply their understanding of those concepts graphically and numerically. It helps for students to see from the beginning of the course how graphs can be used as tools for making sense of economic situations and predicting and explaining economic outcomes; even if a graph is not asked for on the exam, drawing one may help students answer a given question or explain a situation.

Preparing for the AP Exam

Many students lose points on the free-response section of the AP Exam for failing to properly label all the elements of a graph and demonstrate the effects of changes on graphs. When introducing students to graphing in this unit, first model how to set up graphs, emphasizing the importance of properly labeling axes, curves, and equilibrium points. Give students opportunities to practice setting up graphs and demonstrating the effects of changes on their graphs. It is important to continue to emphasize and appropriately model these skills throughout the course.

Another challenging concept for students is differentiating between movement along a curve and shifts of a curve. In the context of learning about the basic model of supply and demand in this unit, consider spending time helping students distinguish between the effects of a price change and changes in the determinants of supply and demand. This will help students apply this understanding in other market models that come later in the course.

UNIT AT A GLANCE

Enduring Understanding	Topic	Suggested Skills	Class Periods ~8–10 CLASS PERIODS
MOD-1	**1.1 Scarcity**	1.A Describe economic concepts, principles, or models.	
MOD-1	**1.2 Opportunity Cost and the Production Possibilities Curve (PPC)**	4.A Draw an accurately labeled graph or visual to represent an economic model or market.	
MKT-1	**1.3 Comparative Advantage and Gains from Trade**	1.C Identify an economic concept, principle, or model using quantitative data or calculations.	
MKT-2	**1.4 Demand**	4.A Draw an accurately labeled graph or visual to represent an economic model or market.	
MKT-2	**1.5 Supply**	4.A Draw an accurately labeled graph or visual to represent an economic model or market.	
MKT-2	**1.6 Market Equilibrium, Disequilibrium, and Changes in Equilibrium**	4.C Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.	
	Go to **AP Classroom** to assign the **Personal Progress Check** for Unit 1. Review the results in class to identify and address any student misunderstandings.		

SAMPLE INSTRUCTIONAL ACTIVITIES

The sample activities on this page are optional and are offered to provide possible ways to incorporate various instructional approaches into the classroom. Teachers do not need to use these activities or instructional approaches and are free to alter or edit them. The examples below were developed in partnership with teachers from the AP community to share ways that they approach teaching some of the topics in this unit. Please refer to the Instructional Approaches section beginning on p. 113 for more examples of activities and strategies.

Activity	Topic	Sample Activity
1	1.2	**Real-World Examples** Provide students with the following scenario: They have four hours and need to decide how they are going to spend those four hours doing only two things. Students will then draw the PPC curve and describe how they will spend those four hours. Using specific, real-world examples, have students explain what happens when a point is inside the curve, on the curve, and beyond the curve.
2	1.4	**Simulation and Debriefing** Carry out a classroom auction for an item of value in order to introduce students to the relationship between price and quantity demanded. Use the data from the auction to graph demand. Then simulate a change in one of the determinants of demand (e.g., by providing students with fake money to increase their income) so that students can distinguish between a change in quantity demanded and a change in demand. Debrief the experience with students to ensure that connections are made to the concepts being studied.
3	1.6	**Graph and Switch** Instruct students to draw and then manipulate a series of product markets based on changes in market conditions. After completing each example, pair students with a partner and have them switch graphs and provide feedback to one another regarding the graphs they have drawn.

Unit Planning Notes

Use the space below to plan your approach to the unit. Consider how you want to pace your course and your methods of instruction and assessment.

SUGGESTED SKILL

Principles and Models

1.A

Describe economic concepts, principles, or models.

AVAILABLE RESOURCE

- External Resource > **Davidson Next AP Macroeconomics Course—Introduction and Basic Concepts**

TOPIC 1.1
Scarcity

Required Course Content

ENDURING UNDERSTANDING

MOD-1

The production possibilities curve (PPC) model is used to demonstrate the full employment level of output and to illustrate changes in full employment.

LEARNING OBJECTIVE

MOD-1.A

Define scarcity and economic resources.

ESSENTIAL KNOWLEDGE

MOD-1.A.1

Individuals and societies are forced to make choices because most resources are scarce.

TOPIC 1.2
Opportunity Cost and the Production Possibilities Curve (PPC)

Required Course Content

ENDURING UNDERSTANDING

MOD-1

The production possibilities curve (PPC) model is used to demonstrate the full employment level of output and to illustrate changes in full employment.

LEARNING OBJECTIVE

MOD-1.B

a. Define (using graphs as appropriate) the PPC and related terms.
b. Explain (using graphs as appropriate) how the PPC illustrates opportunity costs, tradeoffs, inefficiency, efficiency, and economic growth or contraction under various conditions.
c. Calculate (using data from PPCs or tables as appropriate) opportunity cost.

ESSENTIAL KNOWLEDGE

MOD-1.B.1

The PPC is a model used to show the tradeoffs associated with allocating resources.

MOD-1.B.2

The PPC can be used to illustrate the concepts of scarcity, opportunity cost, efficiency, underutilized resources, and economic growth or contraction.

MOD-1.B.3

The shape of the PPC depends on whether opportunity costs are constant, increasing, or decreasing.

MOD-1.B.4

The PPC can shift because of changes in factors of production as well as changes in productivity/technology.

MOD-1.B.5

Economic growth results in an outward shift of the PPC.

SUGGESTED SKILL

Graphing and Visuals

4.A

Draw an accurately labeled graph or visual to represent an economic model or market.

AVAILABLE RESOURCE

- External Resource > Davidson Next AP Macroeconomics Course—Introduction and Basic Concepts

SUGGESTED SKILL

Principles and Models

1.C

Identify an economic concept, principle, or model using quantitative data or calculations.

AVAILABLE RESOURCES

- External Resource > **Davidson Next AP Macroeconomics Course—Comparative Advantage & Trade**
- Classroom Resources > **International Economics and the AP Macroeconomics Course**

TOPIC 1.3
Comparative Advantage and Gains from Trade

Required Course Content

ENDURING UNDERSTANDING

MKT-1

Production and consumption increase by engaging in trade.

LEARNING OBJECTIVE

MKT-1.A

a. Define absolute advantage and comparative advantage.

b. Determine (using data from PPCs or tables as appropriate) absolute and comparative advantage.

ESSENTIAL KNOWLEDGE

MKT-1.A.1

Absolute advantage describes a situation in which an individual, business, or country can produce more of a good or service than any other producer with the same quantity of resources.

MKT-1.A.2

Comparative advantage describes a situation in which an individual, business, or country can produce a good or service at a lower opportunity cost than another producer.

MKT-1.B

a. Explain (using data from PPCs or tables as appropriate) how specialization according to comparative advantage with appropriate terms of trade can lead to gains from trade.

b. Calculate (using data from PPCs or tables as appropriate) mutually beneficial terms of trade.

MKT-1.B.1

Production specialization according to comparative advantage results in exchange opportunities that lead to consumption opportunities beyond the PPC.

MKT-1.B.2

Comparative advantage and opportunity costs determine the terms of trade for exchange under which mutually beneficial trade can occur.

TOPIC 1.4
Demand

Required Course Content

ENDURING UNDERSTANDING

MKT-2

In a competitive market, demand for and supply of a good or service determine the equilibrium price.

LEARNING OBJECTIVE

MKT-2.A

a. Define (using graphs as appropriate) the law of demand.
b. Explain (using graphs as appropriate) the relationship between the price of a good or service and the quantity demanded.

MKT-2.B

Explain (using graphs as appropriate) the determinants of demand.

ESSENTIAL KNOWLEDGE

MKT-2.A.1

The law of demand states there is an inverse relationship between price and quantity demanded, leading to a downward-sloping demand curve.

MKT-2.B.1

Factors that influence consumer demand, such as changes in consumer income, cause the market demand curve to shift.

SUGGESTED SKILL

Graphing and Visuals

4.A

Draw an accurately labeled graph or visual to represent an economic model or market.

AVAILABLE RESOURCES

- External Resource > **Davidson Next AP Macroeconomics Course—Supply & Demand**
- Classroom Resources > **Markets – *Lesson: A Comparison of Graphs from Microeconomics and Macroeconomics***

SUGGESTED SKILL

Graphing and Visuals

4.A

Draw an accurately labeled graph or visual to represent an economic model or market.

AVAILABLE RESOURCES

- External Resource > **Davidson Next AP Macroeconomics Course—Supply & Demand**
- Classroom Resources > **Markets – *Lesson: A Comparison of Graphs from Microeconomics and Macroeconomics***

TOPIC 1.5
Supply

Required Course Content

ENDURING UNDERSTANDING

MKT-2

In a competitive market, demand for and supply of a good or service determine the equilibrium price.

LEARNING OBJECTIVE

MKT-2.C

a. Define (using graphs as appropriate) the law of supply.

b. Explain (using graphs as appropriate) the relationship between the price of a good or service and the quantity supplied.

ESSENTIAL KNOWLEDGE

MKT-2.C.1

The law of supply states there is a positive relationship between price and quantity supplied, leading to an upward-sloping supply curve.

MKT-2.D

Explain (using graphs as appropriate) the determinants of supply.

MKT-2.D.1

Factors that influence producer supply, such as changes in input prices, cause the market supply curve to shift.

TOPIC 1.6
Market Equilibrium, Disequilibrium, and Changes in Equilibrium

Required Course Content

ENDURING UNDERSTANDING

MKT-2

In a competitive market, demand for and supply of a good or service determine the equilibrium price.

LEARNING OBJECTIVE	ESSENTIAL KNOWLEDGE
MKT-2.E Define (using graphs as appropriate) market equilibrium.	**MKT-2.E.1** Equilibrium is achieved at the price at which quantities demanded and supplied are equal.
MKT-2.F a. Define a surplus and shortage. b. Explain (using graphs as appropriate) how prices adjust to restore equilibrium in markets that are experiencing imbalances. c. Calculate (using graphs as appropriate) the surplus or shortage in the market experience an imbalance.	**MKT-2.F.1** Whenever markets experience imbalances—creating disequilibrium prices, surpluses, and shortages—market forces drive prices toward equilibrium.
MKT-2.G Explain (using graphs as appropriate) how changes in demand and supply affect equilibrium price and equilibrium quantity.	**MKT-2.G.1** Changes in the determinants of supply and/or demand result in a new equilibrium price and quantity.

SUGGESTED SKILL

Graphing and Visuals

4.C

Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.

AVAILABLE RESOURCES

- External Resource > Davidson Next AP Macroeconomics Course—Supply & Demand
- Classroom Resources > Markets – *Lesson: A Comparison of Graphs from Microeconomics and Macroeconomics*

AP MACROECONOMICS

UNIT 2

Economic Indicators and the Business Cycle

12–17%
AP EXAM WEIGHTING

~9–11
CLASS PERIODS

UNIT 2

12–17% AP EXAM WEIGHTING | **~9–11** CLASS PERIODS

Economic Indicators and the Business Cycle

BIG IDEA 1
Economic Measurements MEA

- How is one person's spending another person's income?
- How do we know if an economy is doing well or poorly?

Developing Understanding

While Unit 1 provided students with an understanding of basic economic theory, Unit 2 sets them up for future analysis of macroeconomic concepts and issues. Students will learn how the economy works with a model of the circular flow of inputs and outputs and the money that pays for them. Students will also explore how economists assess the performance of the economy with an introduction to measures of economic performance and the business cycle. These concepts will be revisited in different contexts and models in the units that follow.

Building Course Skills

1.A 1.B 1.C 1.D 2.C 3.A

In this unit, students will continue to build on their application of economic principles and models by examining key measures of economic performance: gross domestic product (GDP), unemployment, and inflation. Give students opportunities to fully explain these indicators, including what they measure, how they are calculated, and what limitations they have. Since these indicators will be used in different models and contexts later in the course, students should not simply memorize a textbook definition of each indicator. It will be difficult for students to apply their understanding of these indicators in other contexts if they cannot fully explain them.

Preparing for the AP Exam

On the AP Exam, students will be expected to identify and represent economic concepts using quantitative data and calculations. Quantitative analysis is an important practice for economists and an important skill in this unit. When teaching this course, keep in mind that quantitative analysis in economics involves interpretation and application, which is more cognitively demanding than just carrying out a simple calculation. To help them gain fluency, have students practice basic calculations such as converting nominal values into real values. However, it is important to prepare students for the exam with a thorough grounding in the concepts and sufficient practice applying them in numerical contexts. If students do not fully understand the underlying concepts and just memorize a formula or mathematical process, they may struggle to carry out the appropriate calculations or analysis of given data in different contexts on the AP Exam.

UNIT AT A GLANCE

Enduring Understanding	Topic	Suggested Skills	Class Periods
			~9–11 CLASS PERIODS
MEA-1	**2.1 The Circular Flow and GDP**	1.A Describe economic concepts, principles, or models.	
	2.2 Limitations of GDP	1.D Describe the similarities, differences, and limitations of economic concepts, principles, or models.	
	2.3 Unemployment	1.B Identify an economic concept, principle, or model illustrated by an example.	
	2.4 Price Indices and Inflation	2.C Interpret a specific economic outcome using quantitative data or calculations.	
	2.5 Costs of Inflation	3.A Determine the outcome of an economic situation using economic concepts, principles, or models.	
	2.6 Real v. Nominal GDP	1.C Identify an economic concept, principle, or model using quantitative data or calculations.	
MEA-2	**2.7 Business Cycles**	1.A Describe economic concepts, principles, or models.	
	Go to **AP Classroom** to assign the **Personal Progress Check** for Unit 2. Review the results in class to identify and address any student misunderstandings.		

SAMPLE INSTRUCTIONAL ACTIVITIES

The sample activities on this page are optional and offered to provide possible ways to incorporate various instructional approaches into the classroom. Teachers do not need to use these activities or instructional approaches and are free to alter or edit them. The examples below were developed in partnership with teachers from the AP community to share ways that they approach teaching some of the topics in this unit. Please refer to the Instructional Approaches section beginning on p. 113 for more examples of activities and strategies.

Activity	Topic	Sample Activity
1	2.1	**Simulation and Debriefing** Assign students to be either households or businesses and carry out a classroom simulation to demonstrate the relationships represented by the circular flow model. Debrief the experience with students to ensure that connections are made to the concepts being studied.
2	2.2	**Discussion Groups** Assign students to groups to discuss the limitations of GDP. Provide students with a series of questions to prompt discussion (e.g., *What is counted and not counted in GDP? Does GDP measure the well-being of that country's society?*).
3	2.3	**Simplify the Problem** Show students how to access the most recent "Employment Situation Summary" from the **U.S. Bureau of Labor Statistics** website. Instruct students to scroll down the page and use the household survey data provided to calculate the labor force participation rate and unemployment rate themselves. Then have them verify their work based on the data given in the summary.
4	2.4	**Real-World Examples** Instruct students to work together to create a classroom market basket using current prices of the products they typically purchase compared to a base year, such as the year of their birth. (The **U.S. Bureau of Labor Statistics** Databases, Tables & Calculators are a helpful data source for this activity.) Discuss the limitations of the market basket, such as substitution and quality differences.
5	2.1, 2.3, 2.4	**Ask the Expert** Assign small groups to research the three economic indicators addressed in this unit: the unemployment rate, the inflation rate, and GDP. As part of their research, students should find current data and articles so that they are prepared to explain the status of their indicator to their classmates. Once students have become experts on their given indicator, have groups rotate through each expert station to learn about the indicators they have not yet mastered.

Unit Planning Notes

Use the space below to plan your approach to the unit. Consider how you want to pace your course and your methods of instruction and assessment.

SUGGESTED SKILL

Principles and Models

1.A

Describe economic concepts, principles, or models.

AVAILABLE RESOURCE

- External Resource > Davidson Next AP Macroeconomics Course—Measures of Economic Performance

TOPIC 2.1
The Circular Flow and GDP

Required Course Content

ENDURING UNDERSTANDING

MEA-1

An economy's performance can be measured by different indicators such as gross domestic product (GDP), the inflation rate, and the unemployment rate.

LEARNING OBJECTIVE

MEA-1.A

a. Define (using the circular flow diagram as appropriate) how GDP is measured and its components.

b. Calculate nominal GDP.

ESSENTIAL KNOWLEDGE

MEA-1.A.1

GDP is a measure of final output of the economy.

MEA-1.A.2

GDP as a total flow of income and expenditure can be represented by the circular flow diagram.

MEA-1.A.3

There are three ways of measuring GDP: the expenditures approach, the income approach, and the value-added approach.

TOPIC 2.2
Limitations of GDP

Required Course Content

ENDURING UNDERSTANDING

MEA-1

An economy's performance can be measured by different indicators such as gross domestic product (GDP), the inflation rate, and the unemployment rate.

LEARNING OBJECTIVE

MEA-1.B

Define the limitations of GDP.

ESSENTIAL KNOWLEDGE

MEA-1.B.1

GDP is a useful indicator of a nation's economic performance, but it has some limitations, such as failing to account for nonmarket transactions.

SUGGESTED SKILL

Principles and Models

1.D

Describe the similarities, differences, and limitations of economic concepts, principles, or models.

AVAILABLE RESOURCE

- External Resource > Davidson Next AP Macroeconomics Course—Measures of Economic Performance

SUGGESTED SKILL

Principles and Models

1.B

Identify an economic concept, principle, or model illustrated by an example.

AVAILABLE RESOURCE

- External Resource > Davidson Next AP Macroeconomics Course—Measures of Economic Performance

TOPIC 2.3
Unemployment

Required Course Content

ENDURING UNDERSTANDING

MEA-1

An economy's performance can be measured by different indicators such as gross domestic product (GDP), the inflation rate, and the unemployment rate.

LEARNING OBJECTIVE

MEA-1.C

a. Define the labor force, the unemployment rate, and the labor force participation rate.
b. Explain how changes in employment and the labor market affect the unemployment rate and the labor force participation rate.
c. Calculate the unemployment rate and the labor force participation rate.

ESSENTIAL KNOWLEDGE

MEA-1.C.1

The unemployment rate is the percentage of the labor force that is out of work.

MEA-1.C.2

The labor force participation rate is another measure of the labor market activity in an economy. The labor force participation rate is the percentage of the adult population that is in the labor force.

MEA-1.D

Define the limitations of the unemployment rate.

MEA-1.D.1

The measured unemployment rate is often criticized for understating the level of joblessness because it excludes groups such as discouraged workers and part-time workers.

continued on next page

Economic Indicators and the Business Cycle

LEARNING OBJECTIVE

MEA-1.E

a. Define the types of unemployment and the natural rate of unemployment.

b. Explain changes in the types of unemployment.

ESSENTIAL KNOWLEDGE

MEA-1.E.1

Economists primarily focus on three types of unemployment: cyclical, frictional, and structural.

MEA-1.E.2

The natural rate of unemployment is the unemployment rate that would exist when the economy produces full-employment real output. It is equal to the sum of frictional and structural unemployment.

MEA-1.E.3

The deviation of the actual unemployment rate from the natural rate is cyclical unemployment.

MEA-1.E.4

The natural rate of unemployment can gradually change over time because of such things as changes in labor force characteristics.

SUGGESTED SKILL

Interpretation

2.C

Interpret a specific economic outcome using quantitative data or calculations.

AVAILABLE RESOURCE

- External Resource > Davidson Next AP Macroeconomics Course—Measures of Economic Performance

TOPIC 2.4
Price Indices and Inflation

Required Course Content

ENDURING UNDERSTANDING

MEA-1

An economy's performance can be measured by different indicators such as gross domestic product (GDP), the inflation rate, and the unemployment rate.

LEARNING OBJECTIVE

MEA-1.F

a. Define the consumer price index (CPI), inflation, deflation, disinflation, the inflation rate, and real variables.

b. Explain how price indices can be used to calculate the inflation rate and to compare nominal variables over time periods.

c. Calculate the CPI, the inflation rate, and changes in real variables.

ESSENTIAL KNOWLEDGE

MEA-1.F.1

The consumer price index (CPI) measures the change in income a consumer would need in order to maintain the same standard of living over time under a new set of prices as under the original set of prices.

MEA-1.F.2

The CPI measures the cost of a fixed basket of goods and services in a given year relative to the base year.

Exclusion:
Calculating the producer price index (PPI) is beyond the scope of the course and AP Exam.

MEA-1.F.3

The inflation rate is determined by calculating the percentage change in a price index, such as CPI or the GDP deflator.

MEA-1.F.4

Real variables, such as real wages, are the nominal variables deflated by the price level.

MEA-1.G

Define the shortcomings of the CPI as a true measure of inflation.

MEA-1.G.1

The CPI as a measure of inflation has some shortcomings, such as substitution bias, causing it to overstate the true inflation rate.

TOPIC 2.5
Costs of Inflation

Required Course Content

ENDURING UNDERSTANDING

MEA-1

An economy's performance can be measured by different indicators such as gross domestic product (GDP), the inflation rate, and the unemployment rate.

LEARNING OBJECTIVE

MEA-1.H

Explain the costs that unexpected inflation (deflation) imposes on individuals and the economy.

ESSENTIAL KNOWLEDGE

MEA-1.H.1

Unexpected inflation arbitrarily redistributes wealth from one group of individuals to another group, such as lenders to borrowers.

SUGGESTED SKILL

Manipulation

3.A

Determine the outcome of an economic situation using economic concepts, principles, or models.

AVAILABLE RESOURCE

- External Resource > Davidson Next AP Macroeconomics Course—Measures of Economic Performance

SUGGESTED SKILL

Principles and Models

1.C

Identify an economic concept, principle, or model using quantitative data or calculations.

AVAILABLE RESOURCE

- External Resource > Davidson Next AP Macroeconomics Course—Real and Nominal Values

TOPIC 2.6
Real v. Nominal GDP

Required Course Content

ENDURING UNDERSTANDING

MEA-1

An economy's performance can be measured by different indicators such as gross domestic product (GDP), the inflation rate, and the unemployment rate.

LEARNING OBJECTIVE	ESSENTIAL KNOWLEDGE
MEA-1.I Define nominal GDP and real GDP.	**MEA-1.I.1** Nominal GDP is a measure of how much is spent on output. Real GDP is a measure of how much is produced.
	MEA-1.I.2 Nominal GDP measures aggregate output using current prices. Real GDP measures aggregate output using constant prices, thus removing the effect of changes in the overall price level.
MEA-1.J Calculate real GDP and the GDP deflator.	**MEA-1.J.1** One way of measuring real GDP is to weigh final goods and services by their prices in a base year. Because this can lead to overstatement of real GDP growth, statistical agencies actually use different methods.
	MEA-1.J.2 Nominal GDP can be converted to real GDP by using the GDP deflator.

TOPIC 2.7
Business Cycles

Required Course Content

ENDURING UNDERSTANDING

MEA-2

The economy fluctuates between periods of expansion and contraction in the short run, but economic growth can occur in the long run.

LEARNING OBJECTIVE

MEA-2.A

a. Define (using graphs and data as appropriate) turning points and phases of the business cycle.

b. Explain (using graphs and data as appropriate) turning points and phases of the business cycle.

ESSENTIAL KNOWLEDGE

MEA-2.A.1

Business cycles are fluctuations in aggregate output and employment because of changes in aggregate supply and/or aggregate demand.

MEA-2.A.2

The phases of a business cycle are recession and expansion.

MEA-2.A.3

The turning points of a business cycle are peak and trough.

MEA-2.A.4

The difference between actual output and potential output is the output gap.

MEA-2.A.5

Potential output is also called full-employment output. It is the level of GDP where unemployment is equal to the natural rate of unemployment. [See EK MEA-1.E.2]

SUGGESTED SKILL

Principles and Models

1.A

Describe economic concepts, principles, or models.

AVAILABLE RESOURCE

- External Resource > Davidson Next AP Macroeconomics Course—Measures of Economic Performance

AP MACROECONOMICS

UNIT 3

National Income and Price Determination

17–27%
AP EXAM WEIGHTING

~10–12
CLASS PERIODS

UNIT 3

17–27% AP EXAM WEIGHTING | **~10–12** CLASS PERIODS

National Income and Price Determination

BIG IDEA 3
Macroeconomic Models **MOD**
- How do spending and production decisions made by households, businesses, the government, and the rest of the world affect an economy?

BIG IDEA 4
Macroeconomic Policies **POL**
- How do policy decisions regarding taxation and government spending affect an economy?

Developing Understanding

In the previous unit, students were introduced to key macroeconomic indicators and the business cycle. In this unit, students will learn how to represent and evaluate these concepts in the context of a specific economic model: the aggregate demand–aggregate supply model. The aggregate demand–aggregate supply model is a powerful tool that allows economists to represent the impact of spending and production decisions, economic fluctuations, and policy actions on macroeconomic outcomes, including output, income, unemployment, and inflation.

Building Course Skills

1.A 2.A 3.A 3.C 4.A 4.B 4.C

Economists rely on economic models as analytical tools to help make sense of the world. Give students meaningful and repetitive practice using the aggregate demand–aggregate supply model to look back to interpret an economic outcome and look forward to anticipate the effects of policy and other changes. Doing so will not only build students' fluency in the skill categories of interpretation and manipulation but will also help them appreciate the explanatory power of economic models.

In this unit, students will continue to develop their quantitative skills, this time in the context of learning about multipliers. Give students opportunities for guided practice calculating multipliers and explaining how changes in spending and taxes lead to changes in real GDP.

Preparing for the AP Exam

The aggregate demand–aggregate supply model is foundational to the study of macroeconomics and, as such, is frequently tested on the AP Exam. Students often conflate the aggregate demand–aggregate supply model with the market supply and demand model introduced in the first unit and may, for example, label the axes of their aggregate demand–aggregate supply graphs with "Price" and "Quantity" rather than "Price Level" and "Real GDP." To prevent this, make sure students conceptually understand the difference between aggregate demand (aggregate supply) and demand (supply) and the implications when graphing and interpreting a graph.

Another challenging concept for students is the difference between macroeconomic outcomes in the short run and the long run. Spend time helping students understand the distinction. On the AP Exam students will be asked to explain (verbally and graphically) the effect of policy actions and changes in economic conditions in the short run and long run and how the economy may achieve long-run equilibrium in the absence of policy actions.

UNIT AT A GLANCE

Enduring Understanding	Topic	Suggested Skills	Class Periods ~10–12 CLASS PERIODS
MOD-2	**3.1 Aggregate Demand (AD)**	4.A Draw an accurately labeled graph or visual to represent an economic model or market.	
	3.2 Multipliers	3.C Determine the effect(s) of a change in an economic situation using quantitative data or calculations.	
	3.3 Short-Run Aggregate Supply (SRAS)	4.A Draw an accurately labeled graph or visual to represent an economic model or market.	
	3.4 Long-Run Aggregate Supply (LRAS)	1.A Describe economic concepts, principles, or models.	
	3.5 Equilibrium in the Aggregate Demand–Aggregate Supply (AD–AS) Model	4.B Demonstrate your understanding of a specific economic situation on an accurately labeled graph or visual.	
	3.6 Changes in the AD–AS Model in the Short Run	4.C Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.	
	3.7 Long-Run Self-Adjustment	3.A Determine the outcome of an economic situation using economic concepts, principles, or models.	
POL-1	**3.8 Fiscal Policy**	2.A Using economic concepts, principles, or models, explain how a specific economic outcome occurs or what action should be taken in order to achieve a specific economic outcome.	
	3.9 Automatic Stabilizers	1.A Describe economic concepts, principles, or models.	

Go to **AP Classroom** to assign the **Personal Progress Check** for Unit 3. Review the results in class to identify and address any student misunderstandings.

SAMPLE INSTRUCTIONAL ACTIVITIES

The sample activities on this page are optional and offered to provide possible ways to incorporate various instructional approaches into the classroom. Teachers do not need to use these activities or instructional approaches and are free to alter or edit them. The examples below were developed in partnership with teachers from the AP community to share ways that they approach teaching some of the topics in this unit. Please refer to the Instructional Approaches section beginning on p. 113 for more examples of activities and strategies.

Activity	Topic	Sample Activity
1	3.1	**Think-Pair-Share** Create cards with the words "Consumption," "Investment," "Government Spending," and "Net Exports" and also arrow cards (increasing arrow and decreasing arrow). Read out headlines (either actual headlines from the news or ones that you've made up) that will shift each of the components of aggregate demand. Have students first think through which component of aggregate demand is affected and which direction it will shift. Then have them share their responses with their partners and then have each pair hold up the appropriate component and arrow cards.
2	3.2	**Numbered Heads Together** Provide students with practice problems that involve calculating multipliers and assign each student a number. Provide students with time to work through the problems together in small groups. Then randomly select a number and ask that respective student to answer for the group.
3	3.5	**Practice Modeling** Model for students how to graph macroeconomic equilibrium using the aggregate demand–aggregate supply model and compare current output levels (Y) to full-employment output (Y_f). Then provide students with an opportunity to practice drawing graphs themselves representing $Y = Y_f$, $Y < Y_f$, and $Y > Y_f$.

Unit Planning Notes

Use the space below to plan your approach to the unit. Consider how you want to pace your course and methods of instruction and assessment.

SUGGESTED SKILL

Graphing and Visuals

4.A

Draw an accurately labeled graph or visual to represent an economic model or market.

AVAILABLE RESOURCES

- External Resource > **Davidson Next AP Macroeconomics Course—Aggregate Demand**
- Classroom Resources > **Markets – *Lesson: A Comparison of Graphs from Microeconomics and Macroeconomics***

TOPIC 3.1
Aggregate Demand (AD)

Required Course Content

ENDURING UNDERSTANDING

MOD-2

Economists use the aggregate demand–aggregate supply model to represent the relationship between the price level and aggregate output in an economy and to illustrate how output, employment, and the price level respond to macroeconomic shocks.

LEARNING OBJECTIVE

MOD-2.A

a. Define (using graphs as appropriate) the aggregate demand (AD) curve.
b. Explain (using graphs as appropriate) the slope of the AD curve and its determinants.

ESSENTIAL KNOWLEDGE

MOD-2.A.1

The aggregate demand (AD) curve describes the relationship between the price level and the quantity of goods and services demanded by households (consumption), firms (investment), government (government spending), and the rest of the world (net exports).

MOD-2.A.2

The negative slope of the AD curve is explained by the real wealth effect, the interest rate effect, and the exchange rate effect. [See EK MKT-3.A.1]

MOD-2.A.3

Any change in the components of aggregate demand (consumption, investment, government spending, or net exports) that is not due to changes in the price level leads to a shift of the AD curve.

TOPIC 3.2
Multipliers

SUGGESTED SKILL

Manipulation

3.C

Determine the effect(s) of a change in an economic situation using quantitative data or calculations.

AVAILABLE RESOURCES

- External Resource > Davidson Next AP Macroeconomics Course—Aggregate Demand
- Classroom Resources > Teaching the Spending Multiplier

Required Course Content

ENDURING UNDERSTANDING

MOD-2

Economists use the aggregate demand–aggregate supply model to represent the relationship between the price level and aggregate output in an economy and to illustrate how output, employment, and the price level respond to macroeconomic shocks.

LEARNING OBJECTIVE

MOD-2.B

a. Define the expenditure multiplier, the tax multiplier, the marginal propensity to consume, and the marginal propensity to save.
b. Explain how changes in spending and taxes lead to changes in real GDP.
c. Calculate how changes in spending and taxes lead to changes in real GDP.

ESSENTIAL KNOWLEDGE

MOD-2.B.1

A $1 change to autonomous expenditures leads to further changes in total expenditures and total output.

MOD-2.B.2

The expenditure multiplier quantifies the size of the change in aggregate demand as a result of a change in any of the components of aggregate demand.

MOD-2.B.3

The tax multiplier quantifies the size of the change in aggregate demand as a result of a change in taxes.

MOD-2.B.4

The expenditure multiplier and tax multiplier depend on the marginal propensity to consume.

MOD-2.B.5

The marginal propensity to consume is the change in consumer spending divided by the change in disposable income. The sum of the marginal propensity to consume and marginal propensity to save is equal to one.

SUGGESTED SKILL

Graphing and Visuals

4.A

Draw an accurately labeled graph or visual to represent an economic model or market.

AVAILABLE RESOURCES

- External Resource > **Davidson Next AP Macroeconomics Course—Aggregate Supply**
- Classroom Resources > **Markets – *Lesson: A Comparison of Graphs from Microeconomics and Macroeconomics***

TOPIC 3.3
Short-Run Aggregate Supply (SRAS)

Required Course Content

ENDURING UNDERSTANDING

MOD-2

Economists use the aggregate demand–aggregate supply model to represent the relationship between the price level and aggregate output in an economy and to illustrate how output, employment, and the price level respond to macroeconomic shocks.

LEARNING OBJECTIVE

MOD-2.C

a. Define (using graphs as appropriate) the short-run aggregate supply (SRAS) curve.
b. Explain (using graphs as appropriate) the slope of the SRAS curve and its determinants.

MOD-2.D

Explain (using graphs as appropriate) how movement along the SRAS curve implies a relationship between the price level (and inflation) and unemployment.

ESSENTIAL KNOWLEDGE

MOD-2.C.1

The short-run aggregate supply (SRAS) curve describes the relationship between the price level and the quantity of goods and services supplied in an economy.

MOD-2.C.2

The SRAS curve is upward-sloping because of sticky wages and prices. [See EK MOD-2.E.1]

MOD-2.C.3

Any factor that causes production costs to change, such as a change in inflationary expectations, will cause the SRAS curve to shift.

MOD-2.D.1

Moving along the SRAS curve, an increase in the price level is associated with an increase in output, which means employment must correspondingly rise. With the labor force held constant, unemployment will fall. So, there is a short-run trade-off between inflation and unemployment. [See EK MOD-3.A.1]

TOPIC 3.4
Long-Run Aggregate Supply (LRAS)

SUGGESTED SKILL

Principles and Models

1.A

Describe economic concepts, principles, or models.

AVAILABLE RESOURCES

- External Resource > **Davidson Next AP Macroeconomics Course—Aggregate Supply**
- Classroom Resources > **Markets – *Lesson: A Comparison of Graphs from Microeconomics and Macroeconomics***

Required Course Content

ENDURING UNDERSTANDING

MOD-2

Economists use the aggregate demand–aggregate supply model to represent the relationship between the price level and aggregate output in an economy and to illustrate how output, employment, and the price level respond to macroeconomic shocks.

LEARNING OBJECTIVE	ESSENTIAL KNOWLEDGE
MOD-2.E Define (using graphs as appropriate) the short run and the long run.	**MOD-2.E.1** In the long run all prices and wages are fully flexible, while in the short run some input prices are fixed. A consequence of flexible long-run prices and wages is the lack of a long-run trade-off between inflation and unemployment.
MOD-2.F Define (using graphs as appropriate) the long-run aggregate supply (LRAS) curve.	**MOD-2.F.1** The LRAS curve corresponds to the production possibilities curve (PPC) because they both represent maximum sustainable capacity. Maximum sustainable capacity is the total output an economic system will produce over a set period of time if all resources are fully employed. [See LO MOD-2.I] **MOD-2.F.2** The LRAS curve is vertical at the full-employment level of output because in the long run wages and prices fully adjust.

SUGGESTED SKILL

Graphing and Visuals

4.B

Demonstrate your understanding of a specific economic situation on an accurately labeled graph or visual.

AVAILABLE RESOURCES

- External Resource > **Davidson Next AP Macroeconomics Course—Short-Run Macroeconomic Equilibrium**
- Classroom Resources > **Markets – *Lesson: A Comparison of Graphs from Microeconomics and Macroeconomics***

TOPIC 3.5

Equilibrium in the Aggregate Demand–Aggregate Supply (AD–AS) Model

Required Course Content

ENDURING UNDERSTANDING

MOD-2

Economists use the aggregate demand–aggregate supply model to represent the relationship between the price level and aggregate output in an economy and to illustrate how output, employment, and the price level respond to macroeconomic shocks.

LEARNING OBJECTIVE

MOD-2.G

Explain (using graphs as appropriate) the short-run and long-run equilibrium price level and output level.

ESSENTIAL KNOWLEDGE

MOD-2.G.1

Short-run equilibrium occurs when the aggregate quantity of output demanded and the aggregate quantity of output supplied are equal—i.e., at the intersection of the AD and SRAS curves.

MOD-2.G.2

Long-run equilibrium occurs when the AD and SRAS curves intersect on the LRAS—i.e., at the full-employment level of real output.

MOD-2.G.3

The short-run equilibrium output can be at the full-employment level of output, above it, or below it, creating positive (i.e., inflationary) or negative (i.e., recessionary) output gaps.

TOPIC 3.6
Changes in the AD–AS Model in the Short Run

Required Course Content

ENDURING UNDERSTANDING

MOD-2

Economists use the aggregate demand–aggregate supply model to represent the relationship between the price level and aggregate output in an economy and to illustrate how output, employment, and the price level respond to macroeconomic shocks.

LEARNING OBJECTIVE

MOD-2.H

Explain (using graphs as appropriate) the response of output, employment, and the price level to an aggregate demand or aggregate supply shock in the short run.

ESSENTIAL KNOWLEDGE

MOD-2.H.1

A positive (negative) shock in AD causes output, employment, and the price level to rise (fall) in the short run.

MOD-2.H.2

A positive (negative) shock in SRAS causes output and employment to rise (fall) and the price level to fall (rise) in the short run.

MOD-2.H.3

Inflation can be caused by changes in aggregate demand (demand-pull) or aggregate supply (cost-push).

SUGGESTED SKILL

Graphing and Visuals

4.C

Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.

AVAILABLE RESOURCES

- AP Exam Resource > **Davidson Next AP Macroeconomics Course—Short-Run Macroeconomic Equilibrium**
- Classroom Resources > **Markets – *Lesson: A Comparison of Graphs from Microeconomics and Macroeconomics***

SUGGESTED SKILL

Manipulation

3.A

Determine the outcome of an economic situation using economic concepts, principles, or models.

AVAILABLE RESOURCES

- External Resource > **Davidson Next AP Macroeconomics Course—Moving to Long-Run Equilibrium**
- Classroom Resources > **Markets – *Lesson: A Comparison of Graphs from Microeconomics and Macroeconomics***

TOPIC 3.7
Long-Run Self-Adjustment

Required Course Content

ENDURING UNDERSTANDING

MOD-2

Economists use the aggregate demand–aggregate supply model to represent the relationship between the price level and aggregate output in an economy and to illustrate how output, employment, and the price level respond to macroeconomic shocks.

LEARNING OBJECTIVE

MOD-2.I

Explain (using graphs as appropriate) the response of output, employment, and the price level to an aggregate demand or aggregate supply shock in the long run.

ESSENTIAL KNOWLEDGE

MOD-2.I.1

In the long run, in the absence of government policy actions, flexible wages and prices will adjust to restore full employment and unemployment will revert to its natural rate after a shock to aggregate demand or short-run aggregate supply. [See EK MEA-1.E.2]

MOD-2.I.2

Shifts in the long-run aggregate supply curve indicate changes in the full-employment level of output and economic growth.

TOPIC 3.8
Fiscal Policy

SUGGESTED SKILL

Interpretation

2.A

Using economic concepts, principles, or models, explain how a specific economic outcome occurs or what action should be taken in order to achieve a specific economic outcome.

AVAILABLE RESOURCE

- External Resource > Davidson Next AP Macroeconomics Course—Fiscal Policy

Required Course Content

ENDURING UNDERSTANDING

POL-1

Fiscal and monetary policy have short-run effects on macroeconomic outcomes.

LEARNING OBJECTIVE

POL-1.A

a. Define fiscal policy and related terms.
b. Explain (using graphs as appropriate) the short-run effects of a fiscal policy action.
c. Calculate the short-run effects of a fiscal policy action.

ESSENTIAL KNOWLEDGE

POL-1.A.1

Governments implement fiscal policies to achieve macroeconomic goals, such as full employment.

POL-1.A.2

The tools of fiscal policy are government spending and taxes/transfers.

POL-1.A.3

Changes in government spending affect aggregate demand directly, and changes in taxes/transfers affect aggregate demand indirectly.

POL-1.A.4

The government spending multiplier is greater than the tax multiplier.

POL-1.A.5

Expansionary or contractionary fiscal policies are used to restore full employment when the economy is in a negative (i.e., recessionary) or positive (i.e., inflationary) output gap.

POL-1.A.6

Fiscal policy can influence aggregate demand, real output, and the price level. [See also EK MKT-5.E.2 for the effect on exchange rates.]

POL-1.A.7

The AD–AS model is used to demonstrate the short-run effects of fiscal policy.

continued on next page

LEARNING OBJECTIVE	ESSENTIAL KNOWLEDGE
POL-1.B Define why there are lags to discretionary fiscal policy.	POL-1.B.1 In reality, there are lags to discretionary fiscal policy because of factors such as the time it takes to decide on and implement a policy action.

TOPIC 3.9
Automatic Stabilizers

SUGGESTED SKILL

Principles and Models

1.A

Describe economic concepts, principles, or models.

AVAILABLE RESOURCE

- External Resource > Davidson Next AP Macroeconomics Course—Fiscal Policy

Required Course Content

ENDURING UNDERSTANDING

POL-1

Fiscal and monetary policy have short-run effects on macroeconomic outcomes.

LEARNING OBJECTIVE

POL-1.C

a. Define automatic stabilizers.

b. Explain how automatic stabilizers moderate business cycles.

ESSENTIAL KNOWLEDGE

POL-1.C.1

Automatic stabilizers support the economy during recessions and help prevent the economy from being overheated during expansionary periods.

POL-1.C.2

Tax revenues decrease automatically as GDP falls, preventing consumption and the economy from falling further.

POL-1.C.3

Tax revenues increase automatically as GDP rises, slowing consumption and preventing the economy from overheating.

POL-1.C.4

Government policies, institutions, or agencies may also have social service programs whose transfer payments act as automatic stabilizers.

AP MACROECONOMICS

UNIT 4

Financial Sector

18–23%
AP EXAM WEIGHTING

~11–13
CLASS PERIODS

UNIT 4

18–23% AP EXAM WEIGHTING | **~11–13** CLASS PERIODS

Financial Sector

BIG IDEA 1
Economic Measurements MEA
- What is money?

BIG IDEA 2
Markets MKT
- How is the price of money determined?

BIG IDEA 4
Macroeconomic Policies POL
- How do banks create money?
- How do the actions of a country's central bank affect financial decision making and the economy?

Developing Understanding

In the previous unit, students explored the effects of fiscal policy. In this unit, students will evaluate the macroeconomic effects of monetary policy. Before doing so, though, they should first have an understanding of how the financial sector works and be able to describe how monetary policy is implemented and transmitted through the banking system. This understanding begins with an introduction to financial assets, including money, and the way in which fractional reserve banking allows for the expansion of the money supply. Students will then build on their understanding of the financial sector by learning how to model the money market, the reserve market, and the loanable funds market.

Building Course Skills

1.A 1.B 2.A 3.C 4.A 4.C

In this unit, students will describe the workings of the financial sector so they can apply that understanding in context. Devote sufficient time to introducing students to new concepts and vocabulary. Vocabulary lists or rote memorization on their own will not allow for knowledge transfer.

Students will also be expected to represent a number of different markets graphically in this unit. Explain the underlying assumptions of each market and practice modeling these assumptions so that students can create properly labeled graphs to represent and evaluate economic situations.

Students will continue to build their quantitative skills by interpreting bank balance sheets and calculating changes in demand deposits, loans, and reserves in the banking system as a result of deposits, withdrawals, and monetary policy. Once again, it's important to spend time grounding students in the underlying concepts—in this case, with a thorough introduction to fractional reserve banking—and provide ample time for numerical examples and practice.

Preparing for the AP Exam

Predicting and explaining the effects of fiscal and monetary policy actions is an important role of economists and an expectation of students on the AP Exam. Understanding fiscal and monetary policy will also help students become more informed citizens.

When responding to free-response questions on the AP Exam that ask which open-market operation is appropriate in a given economic scenario, students often use a scattershot approach and list all possible monetary policy actions rather than the appropriate open-market operation. Students should practice carefully reading and responding to the question, ensuring that they answer the question that is being asked. This will help students perform better on the exam and move them away from rote memorization and toward greater understanding.

Balance sheet questions are a common challenge area for students on the AP Exam. Use past AP Exam questions to analyze the tasks and determine key vocabulary and misunderstandings students have when approaching the questions. Then provide opportunities for guided practice answering questions.

UNIT AT A GLANCE

Enduring Understanding	Topic	Suggested Skills	Class Periods ~11–13 CLASS PERIODS
MEA-3	**4.1 Financial Assets**	1.D Describe the similarities, differences, and limitations of economic concepts, principles, or models.	
	4.2 Nominal v. Real Interest Rates	1.A Describe economic concepts, principles, or models.	
	4.3 Definition, Measurement, and Functions of Money	1.B Identify an economic concept, principle, or model illustrated by an example.	
POL-2	**4.4 Banking and the Expansion of the Money Supply**	3.C Determine the effect(s) of a change in an economic situation using quantitative data or calculations.	
MKT-3	**4.5 The Money Market**	4.A Draw an accurately labeled graph or visual to represent an economic model or market.	
POL-1	**4.6 Monetary Policy**	2.A Using economic concepts, principles, or models, explain how a specific economic outcome occurs or what action should be taken in order to achieve a specific economic outcome.	
MKT-4	**4.7 The Loanable Funds Market**	4.C Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.	

Go to **AP Classroom** to assign the **Personal Progress Check** for Unit 4.
Review the results in class to identify and address any student misunderstandings.

SAMPLE INSTRUCTIONAL ACTIVITIES

The sample activities on this page are optional and offered to provide possible ways to incorporate various instructional approaches into the classroom. Teachers do not need to use these activities or instructional approaches and are free to alter or edit them. The examples below were developed in partnership with teachers from the AP community to share ways that they approach teaching some of the topics in this unit. Please refer to the Instructional Approaches section beginning on p. 113 for more examples of activities and strategies.

Activity	Topic	Sample Activity
1	4.1	**QHT** Provide students with a list of critical vocabulary for this topic (e.g., stock, bond, interest rate, loan). Have students mark the list with a Q for words they have a question about, an H for words they have heard and might be able to identify, and a T for words they know well enough to teach to their peers. Discuss their markings as a class and have students who marked any words with a T describe the terms to their classmates.
2	4.4, 4.5, 4.6	**Simulation and Debriefing** Carry out an in-class simulation of open-market operations in an economy with limited reserves to give students a frame of reference for how T-accounts record lending activity while also observing the effects of central bank purchases and sales of securities. Have students take on the role of banks and give them a blank T-account and set of assets, typically securities and cash (deposits). With you acting as the central bank, introduce policy actions that require the "banks" to adjust their T-accounts accordingly. Debrief the experience with students to ensure that connections are made to the concepts being studied.
3	4.5, 4.7	**Practice Modeling** The money market, the reserve market, and the loanable funds market are introduced in this unit. When introducing how to graph each market, first model it for students by drawing it on the board and explaining the underlying assumptions while doing so (e.g., why the money demand curve is downward-sloping and why the money supply curve is vertical). Then provide an opportunity for students to practice generating the graph with appropriate labels themselves and work through different scenarios and shifts within the context of each graph.

Unit Planning Notes

Use the space below to plan your approach to the unit. Consider how you want to pace your course and methods of instruction and assessment.

SUGGESTED SKILL

Principles and Models

1.D

Describe the similarities, differences, and limitations of economic concepts, principles, or models.

AVAILABLE RESOURCE

- External Resource > Davidson Next AP Macroeconomics Course—Money and the Money Market

TOPIC 4.1
Financial Assets

Required Course Content

ENDURING UNDERSTANDING

MEA-3

Money makes it possible to compare the value of goods and services, and interest rates provide a measure of the price of money that is borrowed or saved.

LEARNING OBJECTIVE

MEA-3.A

a. Define the principal attributes—liquidity, rate of return, and risk—associated with various classes of financial assets, including money.

b. Explain the relationship between the price of previously issued bonds and interest rates.

ESSENTIAL KNOWLEDGE

MEA-3.A.1

The most liquid forms of money are cash and demand deposits.

MEA-3.A.2

Other financial assets people can hold in place of the most liquid forms of money include bonds (interest-bearing assets) and stocks (equity).

MEA-3.A.3

The price of previously issued bonds and interest rates on bonds are inversely related.

MEA-3.A.4

The opportunity cost of holding money is the interest that could have been earned from holding other financial assets such as bonds.

TOPIC 4.2
Nominal v. Real Interest Rates

SUGGESTED SKILL

Principles and Models

1.A

Describe economic concepts, principles, or models.

AVAILABLE RESOURCES

- External Resource > Davidson Next AP Macroeconomics Course—Money and the Money Market
- Classroom Resources > Well, What Do You Expect? Inflationary Expectations and Macroeconomic Variables

Required Course Content

ENDURING UNDERSTANDING

MEA-3

Money makes it possible to compare the value of goods and services, and interest rates provide a measure of the price of money that is borrowed or saved.

LEARNING OBJECTIVE

MEA-3.B

a. Define the nominal and real interest rate.
b. Explain the relationship between changes in nominal interest rates, expected inflation, and real interest rates.
c. Calculate the nominal and real interest rate.

ESSENTIAL KNOWLEDGE

MEA-3.B.1

A nominal interest rate is the rate of interest paid for a loan, unadjusted for inflation.

MEA-3.B.2

Lenders and borrowers establish nominal interest rates as the sum of their expected real interest rate and expected inflation.

MEA-3.B.3

A real interest rate can be calculated in hindsight by subtracting the actual inflation rate from the nominal interest rate.

SUGGESTED SKILL

Principles and Models

1.B

Identify an economic concept, principle, or model illustrated by an example.

AVAILABLE RESOURCE

- External Resource > Davidson Next AP Macroeconomics Course—Money and the Money Market
- External Resource > Money Stock Measures-See Footnotes for Components

TOPIC 4.3
Definition, Measurement, and Functions of Money

Required Course Content

ENDURING UNDERSTANDING

MEA-3

Money makes it possible to compare the value of goods and services, and interest rates provide a measure of the price of money that is borrowed or saved.

LEARNING OBJECTIVE

MEA-3.C

a. Define money and its functions.
b. Calculate (using data as appropriate) measures of money.

ESSENTIAL KNOWLEDGE

MEA-3.C.1

Money is any asset that is accepted as a means of payment.

MEA-3.C.2

Money serves as a medium of exchange, unit of account, and store of value.

MEA-3.C.3

The money supply is measured using monetary aggregates designated as M1 and M2.

MEA-3.C.4

The monetary base (often labeled as M0 or MB) includes currency in circulation and bank reserves.

TOPIC 4.4
Banking and the Expansion of the Money Supply

Required Course Content

ENDURING UNDERSTANDING

POL-2

The banking system plays an important role in the expansion of the money supply.

LEARNING OBJECTIVE

POL-2.A

a. Define key terms related to the banking system and the expansion of the money supply.
b. Explain how the banking system creates and expands the money supply.
c. Calculate (using data and balance sheets as appropriate) the effects of changes in the banking system.

ESSENTIAL KNOWLEDGE

POL-2.A.1
Depository institutions (such as commercial banks) organize their assets and liabilities on balance sheets.

POL-2.A.2
Depository institutions operate using fractional reserve banking.

POL-2.A.3
Banks' reserves are divided into required reserves and excess reserves.

POL-2.A.4
Excess reserves are the basis of expansion of the money supply by the banking system.

POL-2.A.5
The money multiplier is the ratio of the money supply to the monetary base.

POL-2.A.6
The size of expansion of the money supply depends on the money multiplier.

POL-2.A.7
The maximum value of the money multiplier can be calculated as the reciprocal of the required reserve ratio.

POL-2.A.8
The amount predicted by the simple money multiplier may be overstated because it does not take into account a bank's desire to hold excess reserves or the public holding more currency.

SUGGESTED SKILL

Manipulation

3.C

Determine the effect(s) of a change in an economic situation using quantitative data or calculations.

AVAILABLE RESOURCE

- External Resource > Davidson Next AP Macroeconomics Course—Money Creation

SUGGESTED SKILL

Graphing and Visuals

4.A

Draw an accurately labeled graph or visual to represent an economic model or market.

AVAILABLE RESOURCES

- External Resource > **Davidson Next AP Macroeconomics Course—Money and the Money Market**
- Classroom Resources > **Markets – *Reconciling the Markets for Money and for Loanable Funds***

TOPIC 4.5
The Money Market

Required Course Content

ENDURING UNDERSTANDING

MKT-3

In the money market, demand for and supply of money determine the equilibrium nominal interest rate and influence the value of other financial assets.

LEARNING OBJECTIVE	ESSENTIAL KNOWLEDGE
MKT-3.A a. Define (using graphs as appropriate) the money market, money demand, and money supply. b. Explain (using graphs as appropriate) the relationship between the nominal interest rate and the quantity of money demanded (supplied).	**MKT-3.A.1** The demand for money shows the inverse relationship between the nominal interest rate and the quantity of money people want to hold. **MKT-3.A.2** Given a monetary base determined by a country's central bank, money supply is independent of the nominal interest rate.
MKT-3.B Define (using graphs as appropriate) equilibrium in the money market.	**MKT-3.B.1** In the money market, equilibrium is achieved when the nominal interest rate is such that the quantities demanded and supplied of money are equal.
MKT-3.C Explain (using graphs as appropriate) how nominal interest rates adjust to restore equilibrium in the money market.	**MKT-3.C.1** Disequilibrium nominal interest rates create surpluses and shortages in the money market. Market forces drive nominal interest rates toward equilibrium.

continued on next page

LEARNING OBJECTIVE

MKT-3.D

a. Explain (using graphs as appropriate) the determinants of demand and supply in the money market.

b. Explain (using graphs as appropriate) how changes in demand and supply in the money market affect the equilibrium nominal interest rate.

ESSENTIAL KNOWLEDGE

MKT-3.D.1

Factors that shift the demand for money, such as changes in the price level, and supply of money, such as monetary policy, change the equilibrium nominal interest rate.

SUGGESTED SKILL

Interpretation

2.A

Using economic concepts, principles, or models, explain how a specific economic outcome occurs or what action should be taken in order to achieve a specific economic outcome.

AVAILABLE RESOURCES

- External Resource > The Federal Reserve Bank of St. Louis – Teaching the New Tools of Monetary Policy

TOPIC 4.6
Monetary Policy

Required Course Content

ENDURING UNDERSTANDING

POL-1

Fiscal and monetary policy have short-run effects on macroeconomic outcomes.

LEARNING OBJECTIVE

POL-1.D

a. Define monetary policy and related terms.
b. Explain (using graphs as appropriate) the short-run effects of a monetary policy action.
c. Calculate (using data and balance sheets as appropriate) the effects of a monetary policy action.

ESSENTIAL KNOWLEDGE

POL-1.D.1

Central banks implement monetary policies to achieve macroeconomic goals, such as price stability.

POL-1.D.2

The tools of monetary policy may include the central bank's discount rate and other administered interest rates (e.g., interest on reserves), open market operations, and the required reserve ratio. The tools used and the way in which they are implemented differ between economies that have limited reserves in their banking system and economies that have ample reserves in their banking system. (The banking system in the United States has ample reserves, and the Federal Reserve's key policy tool is interest on reserves.)

POL-1.D.3

When the central bank conducts an open-market purchase (sale), reserves increase (decrease), thereby increasing (decreasing) the monetary base.

POL-1.D.4

When the central bank conducts an open-market purchase (sale) in an economy with limited reserves, the effect on the money supply is greater than the effect on the monetary base because of the money multiplier.

continued on next page

LEARNING OBJECTIVE	ESSENTIAL KNOWLEDGE
POL-1.D a. Define monetary policy and related terms. b. Explain (using graphs as appropriate) the short-run effects of a monetary policy action. c. Calculate (using data and balance sheets as appropriate) the effects of a monetary policy action.	**POL-1.D.5** Many central banks carry out policy to hit a target range for an overnight interbank lending rate, sometimes referred to as the central bank's policy rate. (In the United States, this is the federal funds rate.) **POL-1.D.6** Central banks can influence the nominal interest rate in the short run, which in turn will affect investment and consumption. [See also EK MKT-5.G.2 for the influence on net capital inflows.] In an economy with limited reserves, the central bank can influence the nominal interest rate by changing the money supply. In an economy with ample reserves, changes in the money supply do not effectively change the nominal interest rate; instead, the central bank can influence the nominal interest rate by changing its administered interest rates. **POL-1.D.7** Expansionary or contractionary monetary policies are used to restore full employment when the economy is in a negative (i.e., recessionary) or positive (i.e., inflationary) output gap. **POL-1.D.8** Monetary policy can influence interest rates, aggregate demand, real output, and the price level. [See also EK MKT-5.E.3 for the effect on exchange rates.] **POL-1.D.9** A money market model, a reserve market model, and/or the AD–AS model may be used to demonstrate the short-run effects of monetary policy.
POL-1.E Define why there are lags to monetary policy.	**POL-1.E.1** In reality, there are lags to monetary policy caused by the time it takes to recognize a problem in the economy and the time it takes the economy to adjust to the policy action.

SUGGESTED SKILL

Graphing and Visuals

4.C

Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.

AVAILABLE RESOURCES

- External Resource > **Davidson Next AP Macroeconomics Course—Loanable Funds**
- Classroom Resources > **Markets – *Reconciling the Markets for Money and for Loanable Funds***

TOPIC 4.7
The Loanable Funds Market

Required Course Content

ENDURING UNDERSTANDING

MKT-4

The interaction of borrowers, who demand loanable funds, and savers, who supply loanable funds, determines the equilibrium real interest rate.

LEARNING OBJECTIVE

MKT-4.A

a. Define (using graphs as appropriate) the loanable funds market, demand for loanable funds, and supply of loanable funds.

b. Explain (using graphs as appropriate) the relationship between the real interest rate and the quantity of loanable funds demanded (supplied).

ESSENTIAL KNOWLEDGE

MKT-4.A.1

The loanable funds market describes the behavior of savers and borrowers.

MKT-4.A.2

The demand for loanable funds shows the inverse relationship between real interest rates and the quantity demanded of loanable funds.

MKT-4.A.3

The supply of loanable funds shows the positive relationship between real interest rates and the quantity supplied of loanable funds.

MKT-4.B

Define national savings in both a closed and an open economy.

MKT-4.B.1

In the absence of international borrowing and lending, national savings is the sum of public savings and private savings.

MKT-4.B.2

For an open economy, investment equals national savings plus net capital inflow.

continued on next page

LEARNING OBJECTIVE	ESSENTIAL KNOWLEDGE
MKT-4.C Define (using graphs as appropriate) equilibrium in the loanable funds market.	**MKT-4.C.1** In the loanable funds market, equilibrium is achieved when the real interest rate is such that the quantities demanded and supplied of loanable funds are equal.
MKT-4.D Explain (using graphs as appropriate) how real interest rates adjust to restore equilibrium in the loanable funds market.	**MKT-4.D.1** Disequilibrium real interest rates create surpluses and shortages in the loanable funds market. Market forces drive real interest rates toward equilibrium.
MKT-4.E a. Explain (using graphs as appropriate) the determinants of demand and supply in the loanable funds market. b. Explain (using graphs as appropriate) how changes in demand and supply in the loanable funds market affect the equilibrium real interest rate and equilibrium quantity of loanable funds.	**MKT-4.E.1** The loanable funds market can be used to show the effects of government spending, taxes, and borrowing on interest rates. **MKT-4.E.2** Factors that shift the demand (such as an investment tax credit) and supply (such as changes in saving behavior) of loanable funds change the equilibrium interest rate and the equilibrium quantity of funds.

AP MACROECONOMICS

UNIT 5

Long-Run Consequences of Stabilization Policies

20–30%
AP EXAM WEIGHTING

~8–10
CLASS PERIODS

UNIT 5

20–30% AP EXAM WEIGHTING | **~8–10** CLASS PERIODS

Long-Run Consequences of Stabilization Policies

BIG IDEA 1
Economic Measurements **MEA**
- How does an economy grow?

BIG IDEA 3
Macroeconomic Models **MOD**
- What is the relationship between inflation and unemployment?

BIG IDEA 4
Macroeconomic Policies **POL**
- How do monetary and fiscal policies affect the economy in the long run?

Developing Understanding

In many ways, Unit 5 is a culmination and an extension of material that has been introduced previously. For example, in Units 3 and 4, students learned that public policy can affect the economy's output, price level, and level of employment in the short run; in this unit, students will build on this understanding to examine the long-run implications of policy actions and the concept of economic growth.

Similarly, in Unit 2 students were introduced to inflation and unemployment as economic indicators, and in Unit 3 they learned about the relationship between inflation and unemployment; in this unit, students explore how the Phillips curve model is used to represent this relationship in the short run and long run.

Building Course Skills

2.A 2.B 3.A 3.B 4.B

In this unit, it helps to place a strong emphasis on fully explaining cause-and-effect relationships. Each step in the chain of cause and effect should be modeled and practiced so students are able to appropriately predict and explain the consequences of a change. Students often make leaps in their reasoning that generate an incorrect prediction about the consequences of an action. Successful explanations that describe the effects of monetary policy on the economy, for example, begin with a discussion of how monetary policy is likely to affect interest rates. If students are unable to explain how monetary policy affects interest rates and how interest rates affect household and firm spending, then they are unlikely to demonstrate a strong understanding of the long-run consequences of stabilization policies undertaken by a central bank. Make connections for students to topics covered previously so they can recognize and build on earlier concepts.

Preparing for the AP Exam

It is crucial for economists, especially those who advise policymakers, to consider what actions lead to economic growth. In this unit and on the AP Exam, students will be asked to predict and explain the long-run implications of policy actions. To do so, they need to understand the difference between the short run and long run, how economic growth is measured, and the determinants of economic growth.

Questions involving the Phillips curve model are a common challenge area for students on the AP Exam. As with other models introduced in the course, it's important to spend time first establishing the assumptions behind the model and provide sufficient time practicing graphing given economic situations and changes. Students should understand the importance of proper labeling, the difference between movement along the curve versus shifts of the curve, and the distinction between the short run and the long run.

UNIT AT A GLANCE

Enduring Understanding	Topic	Suggested Skills	Class Periods ~8–10 CLASS PERIODS
POL-1	**5.1 Fiscal and Monetary Policy Actions in the Short Run**	2.B Using economic concepts, principles, or models, explain how a specific economic outcome occurs when there are multiple contributing variables or what multiple actions should be taken in order to achieve a specific economic outcome.	
MOD-3	**5.2 The Phillips Curve**	4.B Demonstrate your understanding of a specific economic situation on an accurately labeled graph or visual.	
POL-3	**5.3 Money Growth and Inflation**	3.A Determine the outcome of an economic situation using economic concepts, principles, or models.	
	5.4 Government Deficits and the National Debt	3.A Determine the outcome of an economic situation using economic concepts, principles, or models.	
	5.5 Crowding Out	3.B Determine the effect(s) of one or more changes on other economic markets.	
MEA-2, MOD-1	**5.6 Economic Growth**	2.A Using economic concepts, principles, or models, explain how a specific economic outcome occurs or what action should be taken in order to achieve a specific economic outcome.	
POL-4	**5.7 Public Policy and Economic Growth**	2.A Using economic concepts, principles, or models, explain how a specific economic outcome occurs or what action should be taken in order to achieve a specific economic outcome.	

Go to **AP Classroom** to assign the **Personal Progress Check** for Unit 5. Review the results in class to identify and address any student misunderstandings.

SAMPLE INSTRUCTIONAL ACTIVITIES

The sample activities on this page are optional and offered to provide possible ways to incorporate various instructional approaches into the classroom. Teachers do not need to use these activities or instructional approaches and are free to alter or edit them. The examples below were developed in partnership with teachers from the AP community to share ways that they approach teaching some of the topics in this unit. Please refer to the Instructional Approaches section beginning on p. 113 for more examples of activities and strategies.

Activity	Topic	Sample Activity
1	5.2	**Activating Prior Knowledge** Introduce the Phillips curve with a review of what they learned about AD–AS analysis beginning in Unit 3. Have students draw the AD–AS model, then shift AD, and then describe the resulting change in unemployment and price level. Use students' responses to draw the connection between shifts of AD with movement along the short-run Phillips curve. Similarly, point out the correspondence between shifts in the short-run aggregate supply (SRAS) curve and shifts of the short-run Phillips curve.
2	5.4	**Debate** Have students collect and orally present evidence supporting the affirmative and negative arguments for whether the United States should adopt a balanced budget amendment.
3	5.7	**Fishbowl** Provide students with a series of national policy decisions and have some students form an inner circle to discuss the expected effect of those policy decisions on economic growth. The remaining students will form an outer circle to listen, respond, and evaluate.

Unit Planning Notes

Use the space below to plan your approach to the unit. Consider how you want to pace your course and methods of instruction and assessment.

SUGGESTED SKILL

Interpretation

2.B

Using economic concepts, principles, or models, explain how a specific economic outcome occurs when there are multiple contributing variables or what multiple actions should be taken in order to achieve a specific economic outcome.

AVAILABLE RESOURCES

- External Resource >
  - The Federal Reserve Bank of St. Louis – Teaching the New Tools of Monetary Policy
  - Davidson Next AP Macroeconomics Course—Fiscal Policy

TOPIC 5.1

Fiscal and Monetary Policy Actions in the Short Run

Required Course Content

ENDURING UNDERSTANDING

POL-1

Fiscal and monetary policy have short-run effects on macroeconomic outcomes.

LEARNING OBJECTIVE

POL-1.F

Explain (using graphs as appropriate) the effects of combined fiscal and monetary policy actions.

ESSENTIAL KNOWLEDGE

POL-1.F.1

A combination of expansionary or contractionary fiscal and monetary policies may be used to restore full employment when the economy is in a negative (i.e., recessionary) or positive (i.e., inflationary) output gap.

POL-1.F.2

A combination of fiscal and monetary policies can influence aggregate demand, real output, the price level, and interest rates. [For additional details on fiscal and monetary policy actions and how to demonstrate their effects graphically, see LO POL-1.A and LO POL-1.D.]

TOPIC 5.2
The Phillips Curve

Required Course Content

ENDURING UNDERSTANDING

MOD-3

The Phillips curve model is used to represent the relationship between inflation and unemployment and to illustrate how macroeconomic shocks affect inflation and unemployment.

LEARNING OBJECTIVE

MOD-3.A

a. Define (using graphs as appropriate) the short-run Phillips curve and the long-run Phillips curve.
b. Explain (using graphs as appropriate) short-run and long-run equilibrium in the Phillips curve model.

ESSENTIAL KNOWLEDGE

MOD-3.A.1

The short-run trade-off between inflation and unemployment can be illustrated by the downward-sloping short-run Phillips curve (SRPC).

MOD-3.A.2

An economy is always operating somewhere along the SRPC.

MOD-3.A.3

The long-run relationship between inflation and unemployment can be illustrated by the long-run Phillips curve (LRPC), which is vertical at the natural rate of unemployment.

MOD-3.A.4

Long-run equilibrium corresponds to the intersection of the SRPC and the LRPC.

MOD-3.A.5

Points to the left of long-run equilibrium represent inflationary gaps, while points to the right of long-run equilibrium represent recessionary gaps.

continued on next page

SUGGESTED SKILL

Graphing and Visuals

4.B

Demonstrate your understanding of a specific economic situation on an accurately labeled graph or visual.

AVAILABLE RESOURCES

- External Resource > Davidson Next AP Macroeconomics Course—Phillips Curve
- Classroom Resources >
  - Mastering Economic Thinking Skills – *Focusing on the Phillips Curve and Exchange Rates in Macroeconomics*
  - Mastering Economic Thinking Skills – *The Short Run and Long Run Phillips Curves*
  - Well, What Do You Expect? Inflationary Expectations and Macroeconomic Variables

Long-Run Consequences of Stabilization Policies

LEARNING OBJECTIVE

MOD-3.B

Explain (using graphs as appropriate) the response of unemployment and inflation in the short run and in the long run.

ESSENTIAL KNOWLEDGE

MOD-3.B.1

Demand shocks correspond to movement along the SRPC.

MOD-3.B.2

Supply shocks correspond to shifts of the SRPC.

MOD-3.B.3

Factors that cause the natural rate of unemployment to change will cause the LRPC to shift.

TOPIC 5.3
Money Growth and Inflation

SUGGESTED SKILL

Manipulation

3.A

Determine the outcome of an economic situation using economic concepts, principles, or models.

Required Course Content

ENDURING UNDERSTANDING

POL-3

There are long-run implications of monetary and fiscal policy.

LEARNING OBJECTIVE

POL-3.A

a. Explain (using graphs as appropriate) how inflation is a monetary phenomenon.
b. Define the quantity theory of money.
c. Calculate the money supply, velocity, the price level, and real output using the quantity theory of money.

ESSENTIAL KNOWLEDGE

POL-3.A.1

Inflation (deflation) results from increasing (decreasing) the money supply at too rapid of a rate for a sustained period of time.

POL-3.A.2

When the economy is at full employment, changes in the money supply have no effect on real output in the long run.

POL-3.A.3

In the long run, the growth rate of the money supply determines the growth rate of the price level (inflation rate) according to the quantity theory of money.

SUGGESTED SKILL

Manipulation

3.A

Determine the outcome of an economic situation using economic concepts, principles, or models.

AVAILABLE RESOURCE

- External Resource > Davidson Next AP Macroeconomics Course—Fiscal Policy

TOPIC 5.4
Government Deficits and the National Debt

Required Course Content

ENDURING UNDERSTANDING

POL-3

There are long-run implications of monetary and fiscal policy.

LEARNING OBJECTIVE

POL-3.B

a. Define the government budget surplus (deficit) and national debt.

b. Explain the issues involved with the burden of the national debt.

ESSENTIAL KNOWLEDGE

POL-3.B.1

The government budget surplus (deficit) is the difference between tax revenues and government purchases plus transfer payments in a given year.

POL-3.B.2

A government adds to the national debt when it runs a budget deficit.

POL-3.B.3

A government must pay interest on its accumulated debt, thus increasing the national debt and increasingly forgoing using those funds for alternative uses. [See also LO POL-3.C on crowding out.]

TOPIC 5.5
Crowding Out

SUGGESTED SKILL

Manipulation

3.B

Determine the effect(s) of one or more changes on other economic markets.

AVAILABLE RESOURCE

- External Resource > Davidson Next AP Macroeconomics Course—Fiscal Policy

Required Course Content

ENDURING UNDERSTANDING

POL-3

There are long-run implications of monetary and fiscal policy.

LEARNING OBJECTIVE

POL-3.C

a. Define crowding out.

b. Explain (using graphs as appropriate) how fiscal policy may cause crowding out.

ESSENTIAL KNOWLEDGE

POL-3.C.1

When a government is in budget deficit, it typically borrows to finance its spending.

POL-3.C.2

A loanable funds market model can be used to show the effect of government borrowing on the equilibrium real interest rate and the resulting crowding out of private investment. [See MKT-4]

POL-3.C.3

Crowding out refers to the adverse effect of increased government borrowing, which leads to decreased levels of interest-sensitive private sector spending in the short run.

POL-3.C.4

A potential long-run impact of crowding out is a lower rate of physical capital accumulation and less economic growth as a result.

SUGGESTED SKILL

Interpretation

2.A

Using economic concepts, principles, or models, explain how a specific economic outcome occurs or what action should be taken in order to achieve a specific economic outcome.

AVAILABLE RESOURCE

- External Resource > Davidson Next AP Macroeconomics Course—Economic Growth

TOPIC 5.6
Economic Growth

Required Course Content

ENDURING UNDERSTANDING

MEA-2

The economy fluctuates between periods of expansion and contraction in the short run, but economic growth can occur in the long run.

LEARNING OBJECTIVE

MEA-2.B

a. Define measures and determinants of economic growth.
b. Explain (using graphs and data as appropriate) the determinants of economic growth.
c. Calculate (using graphs and data as appropriate) per capita GDP and economic growth.

ESSENTIAL KNOWLEDGE

MEA-2.B.1

Economic growth can be measured as the growth rate in real GDP per capita over time.

MEA-2.B.2

Aggregate employment and aggregate output are directly related because firms need to employ more workers in order to produce more output, holding other factors constant. This is captured by the aggregate production function.

MEA-2.B.3

Output per employed worker is a measure of average labor productivity.

MEA-2.B.4

Productivity is determined by the level of technology and physical and human capital per worker.

MEA-2.B.5

The aggregate production function shows that output per capita is positively related to both physical and human capital per capita.

ENDURING UNDERSTANDING

MOD-1

The production possibilities curve (PPC) model is used to demonstrate the full employment level of output and to illustrate changes in full employment.

LEARNING OBJECTIVE

MOD-1.C

Explain (using graphs as appropriate) how the PPC is related to the long-run aggregate supply (LRAS) curve.

ESSENTIAL KNOWLEDGE

MOD-1.C.1

An outward shift in the PPC is analogous to a rightward shift of the long-run aggregate supply curve. [See LO MOD-2.I]

SUGGESTED SKILL

Interpretation

2.A

Using economic concepts, principles, or models, explain how a specific economic outcome occurs or what action should be taken in order to achieve a specific economic outcome.

AVAILABLE RESOURCES

- External Resource > Davidson Next AP Macroeconomics Course—Economic Growth

TOPIC 5.7
Public Policy and Economic Growth

Required Course Content

ENDURING UNDERSTANDING

POL-4

Authorities and organizations institute policies that affect economic growth.

LEARNING OBJECTIVE

POL-4.A

a. Explain (using graphs as appropriate) public policies aimed at influencing long-run economic growth.

b. Define supply-side fiscal policies.

ESSENTIAL KNOWLEDGE

[For a description of economic growth and information about how to show it graphically, see LO MEA-2.B, LO MOD-1.B, and LO MOD-2.I]

POL-4.A.1

Public policies that impact productivity and labor force participation affect real GDP per capita and economic growth.

POL-4.A.2

Government policies that invest in infrastructure and technology affect growth.

POL-4.A.3

Supply-side fiscal policies affect aggregate demand, aggregate supply, and potential output in the short run and long run by influencing incentives that affect household and business economic behavior.

AP MACROECONOMICS

UNIT 6

Open Economy—International Trade and Finance

10–13%
AP EXAM WEIGHTING

~5–7
CLASS PERIODS

UNIT 6

10–13% AP EXAM WEIGHTING | ~5–7 CLASS PERIODS

Open Economy—International Trade and Finance

BIG IDEA 1
Economic Measurements MEA
- Why does the balance of payments balance?

BIG IDEA 2
Markets MKT
- Why does the price of one nation's currency relative to another nation's currency change?
- How do changes in the value of a country's currency affect that country's economy?

Developing Understanding

Unit 6 introduces students to the concept of an open economy in which a country interacts with the rest of the world through both product and financial markets. This unit is often challenging for students because economic activity between nations must be facilitated by currency exchange, which introduces another market to be considered when analyzing macroeconomic situations.

Changes in economic activity affect the supply of and demand for a nation's currency and subsequently the value of that currency. But it is also true that changes in the value of a country's currency can affect economic activity in that country. In addition to these insights, students have the opportunity in this unit to consider the effects of economic policy on exchange rates and the implications of such changes.

Building Course Skills

1.A 1.C 3.A 3.B 4.A 4.C

In this unit, students will be asked to not only demonstrate a robust understanding of economic principles but also show that they know how to interpret and manipulate economic models in the context of an open economy. They need to synthesize the concepts they have learned throughout the course to explain changes in net exports, financial capital flows, and policy actions in the foreign exchange market, and demonstrate this understanding via graphical representations.

Students often struggle to make the necessary connections between concepts in this unit, so provide them with guided opportunities to practice describing chains of cause and effect verbally and graphically. It is important that students take care to include each step along the way and describe it in enough detail to clarify the reason for the subsequent change. This will help ensure that they actually understand and can explain the connection between macroeconomic variables and the international movement of goods, services, and financial capital.

Preparing for the AP Exam

When taking the AP Exam, students commonly struggle to properly represent the foreign exchange market graphically and predict and explain the effects of changes in this market. It often helps to approach the teaching of the foreign exchange market as another application of the basic supply and demand model—when one nation demands another's currency, the other nation must be willing to supply its own currency to trade, and this interaction determines the equilibrium price, or exchange rate. Be sure to spend sufficient time in class modeling how to graph the foreign exchange market with appropriately labeled curves and axes so students don't needlessly lose points on the exam. When labeling the vertical axis, emphasize that the exchange rate is expressed in terms of one unit of the domestic currency.

UNIT AT A GLANCE

Enduring Understanding	Topic	Suggested Skills	Class Periods ~5–7 CLASS PERIODS
MEA-4	**6.1 Balance of Payments Accounts**	1.A Describe economic concepts, principles, or models.	
MKT-5	**6.2 Exchange Rates**	1.C Identify an economic concept, principle, or model using quantitative data or calculations.	
	6.3 The Foreign Exchange Market	4.A Draw an accurately labeled graph or visual to represent an economic model or market.	
	6.4 Effect of Changes in Policies and Economic Conditions on the Foreign Exchange Market	4.C Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.	
	6.5 Changes in the Foreign Exchange Market and Net Exports	3.A Determine the outcome of an economic situation using economic concepts, principles, or models.	
	6.6 Real Interest Rates and International Capital Flows	3.B Determine the effect(s) of one or more changes on other economic markets.	

Go to **AP Classroom** to assign the **Personal Progress Check** for Unit 6. Review the results in class to identify and address any student misunderstandings.

SAMPLE INSTRUCTIONAL ACTIVITIES

The sample activities on this page are optional and offered to provide possible ways to incorporate various instructional approaches into the classroom. Teachers do not need to use these activities or instructional approaches and are free to alter or edit them. The examples below were developed in partnership with teachers from the AP community to share ways that they approach teaching some of the topics in this unit. Please refer to the Instructional Approaches section beginning on p. 113 for more examples of activities and strategies.

Activity	Topic	Sample Activity
1	6.3, 6.4	**Simulation and Debriefing** Carry out a classroom simulation to demonstrate how the value of a currency in the foreign exchange market is established and how economic conditions influence the value of the currency. Distribute pretend foreign currency to students and explain that they will need to exchange their money for domestic currency in order to purchase a domestic good (e.g., a candy bar). Carry out an auction for the domestic currency while recording the data. Then change the scenario (e.g., distribute more money as a result of improved employment conditions). Debrief the experience with students to ensure that connections are made to the concepts being studied.
2	6.4	**Think-Pair-Share** Use the problem set on teaching foreign exchange in the **Mastering Economic Thinking Skills** module. The problem set provides eight scenarios (p. 42) that will result in an appreciation or depreciation of the value of a currency. Pair students and provide each pair with one of the eight scenarios. Allow time for students to first individually draw graphs indicating the effects of the situation on the foreign exchange market, using both the dollar and the euro market. Then they should clearly indicate the effect on the exchange rate. Have students share their responses with their partners. Once they come to a consensus, have a representative from each of the eight scenarios go to the board to graph and explain the effects to the class.
3	6.5	**Activating Prior Knowledge** After drawing correctly labeled graphs of a given currency and manipulating exchange rates based on a change in market conditions, challenge students to determine a subsequent change in net exports based on the exchange rate change shown on their graph. Students will connect this to a change in aggregate demand (which they were first introduced to in Unit 3), ultimately resulting in a change in output, price level, and unemployment.

Unit Planning Notes

Use the space below to plan your approach to the unit. Consider how you want to pace your course and methods of instruction and assessment.

SUGGESTED SKILL

Principles and Models

1.A

Describe economic concepts, principles, or models.

AVAILABLE RESOURCE

- External Resource > Davidson Next AP Macroeconomics Course—Foreign Exchange Markets
- Classroom Resources > Balance of Payments

TOPIC 6.1
Balance of Payments Accounts

Required Course Content

ENDURING UNDERSTANDING

MEA-4

Foreign trade accounting measures the flow of goods, services, and financial capital between countries.

LEARNING OBJECTIVE

MEA-4.A

a. Define the current account (CA), the capital and financial account (CFA), and the balance of payments (BOP).

b. Explain how changes in the components of the CA and CFA affect a country's BOP.

c. Calculate the CA, the CFA, and the BOP.

ESSENTIAL KNOWLEDGE

MEA-4.A.1

The current account (CA) records net exports, net income from abroad, and net unilateral transfers.

MEA-4.A.2

The CA is not always balanced; it may show a surplus or a deficit. A nation's balance of trade (i.e., net exports) is part of the current account and may also show a surplus or a deficit.

MEA-4.A.3

The capital and financial account (CFA) records financial capital transfers and purchases and sales of assets between countries.

MEA-4.A.4

The CFA is not always balanced; it may show a surplus (financial capital inflow) or a deficit (financial capital outflow).

MEA-4.A.5

The balance of payments (BOP) is an accounting system that records a country's international transactions for a particular time period. It consists of the CA and the CFA.

MEA-4.A.6

Any transaction that causes money to flow into a country is a credit to its BOP account, and any transaction that causes money to flow out is a debit. The sum of all credit entries should match the sum of all debit entries (CA+CFA=0).

TOPIC 6.2
Exchange Rates

Required Course Content

ENDURING UNDERSTANDING

MKT-5

The interaction of buyers and sellers exchanging the currency of one country for the currency of another determines the equilibrium exchange rate in a flexible exchange market and influences the flow of goods, services, and financial capital between countries.

LEARNING OBJECTIVE

MKT-5.A

a. Define the exchange rate, currency appreciation, and currency depreciation.
b. Explain how currencies are valued relative to one another.
c. Calculate the value of one currency relative to another.

ESSENTIAL KNOWLEDGE

MKT-5.A.1

In the foreign exchange market, one currency is exchanged for another; the price of one currency in terms of the other is the exchange rate.

MKT-5.A.2

If one currency becomes more valuable in terms of the other, it is said to appreciate. If one currency becomes less valuable in terms of the other, it is said to depreciate.

SUGGESTED SKILL

Principles and Models

1.C

Identify an economic concept, principle, or model using quantitative data or calculations.

AVAILABLE RESOURCES

- External Resource > Davidson Next AP Macroeconomics Course—Foreign Exchange Markets
- Classroom Resources > Mastering Economic Thinking Skills – *Focusing on the Phillips Curve and Exchange Rates in Macroeconomics and Teaching About Foreign Exchange*

SUGGESTED SKILL

Graphing and Visuals

4.A

Draw an accurately labeled graph or visual to represent an economic model or market.

AVAILABLE RESOURCES

- External Resource > Davidson Next AP Macroeconomics Course—Foreign Exchange Markets
- Classroom Resources >
  - Markets – *Foreign Exchange Markets*
  - Mastering Economic Thinking Skills – *Focusing on the Phillips Curve and Exchange Rates in Macroeconomics* and *Teaching About Foreign Exchange*

TOPIC 6.3
The Foreign Exchange Market

Required Course Content

ENDURING UNDERSTANDING

MKT-5

The interaction of buyers and sellers exchanging the currency of one country for the currency of another determines the equilibrium exchange rate in a flexible exchange market and influences the flow of goods, services, and financial capital between countries.

LEARNING OBJECTIVE

MKT-5.B

a. Define the foreign exchange market, demand for currency, and supply of currency.
b. Explain (using graphs as appropriate) the relationship between the exchange rate and the quantity of currency demanded (supplied).

MKT-5.C

Define (using graphs as appropriate) the equilibrium exchange rate.

ESSENTIAL KNOWLEDGE

MKT-5.B.1

The demand for a currency in a foreign exchange market arises from the demand for the country's goods, services, and financial assets and shows the inverse relationship between the exchange rate and the quantity demanded of a currency.

MKT-5.B.2

The supply of a currency in a foreign exchange market arises from making payments in other currencies and shows the positive relationship between the exchange rate and the quantity supplied of a currency.

MKT-5.C.1

In the foreign exchange market, equilibrium is achieved when the exchange rate is such that the quantities demanded and supplied of the currency are equal.

continued on next page

LEARNING OBJECTIVE	ESSENTIAL KNOWLEDGE
MKT-5.D Explain (using graphs as appropriate) how exchange rates adjust to restore equilibrium in the foreign exchange market.	MKT-5.D.1 Disequilibrium exchange rates create surpluses and shortages in the foreign exchange market. Market forces drive exchange rates toward equilibrium.

SUGGESTED SKILL

Graphing and Visuals

4.C

Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.

AVAILABLE RESOURCES

- External Resource > Davidson Next AP Macroeconomics Course—Foreign Exchange Markets
- Classroom Resources >
  - Markets – Foreign Exchange Markets
  - Mastering Economic Thinking Skills – *Focusing on the Phillips Curve and Exchange Rates in Macroeconomics* and *Teaching About Foreign Exchange*

TOPIC 6.4

Effect of Changes in Policies and Economic Conditions on the Foreign Exchange Market

Required Course Content

ENDURING UNDERSTANDING

MKT-5

The interaction of buyers and sellers exchanging the currency of one country for the currency of another determines the equilibrium exchange rate in a flexible exchange market and influences the flow of goods, services, and financial capital between countries.

LEARNING OBJECTIVE

MKT-5.E

a. Explain (using graphs as appropriate) the determinants of currency demand and supply.

b. Explain (using graphs as appropriate) how changes in demand and supply in the foreign exchange market affect the equilibrium exchange rate.

ESSENTIAL KNOWLEDGE

MKT-5.E.1

Factors that shift the demand for a currency (such as the demand for that country's goods, services, or assets) and the supply of a currency (such as tariffs or quotas on the other country's goods and services) change the equilibrium exchange rate.

MKT-5.E.2

Fiscal policy can influence aggregate demand, real output, the price level, and exchange rates.

MKT-5.E.3

Monetary policy can influence aggregate demand, real output, the price level, and interest rates, and thereby affect exchange rates.

TOPIC 6.5
Changes in the Foreign Exchange Market and Net Exports

Required Course Content

ENDURING UNDERSTANDING

MKT-5

The interaction of buyers and sellers exchanging the currency of one country for the currency of another determines the equilibrium exchange rate in a flexible exchange market and influences the flow of goods, services, and financial capital between countries.

LEARNING OBJECTIVE

MKT-5.F

Explain (using graphs as appropriate) how changes in the value of a currency can lead to changes in a country's net exports and aggregate demand.

ESSENTIAL KNOWLEDGE

MKT-5.F.1

Factors that cause a currency to appreciate cause that country's exports to decrease and its imports to increase. As a result, net exports will decrease.

MKT-5.F.2

Factors that cause a currency to depreciate cause that country's exports to increase and its imports to decrease. As a result, net exports will increase. [See EK MOD-2.A.3 and EK MOD-2.H.1 for explanations of the effect of changes in net exports on aggregate demand and the resulting effects on output, employment, and the price level.]

SUGGESTED SKILL

Manipulation

3.A

Determine the outcome of an economic situation using economic concepts, principles, or models.

AVAILABLE RESOURCES

- External Resource > **Davidson Next AP Macroeconomics Course—Foreign Exchange Markets**
- Classroom Resources > **Mastering Economic Thinking Skills – *Focusing on the Phillips Curve and Exchange Rates in Macroeconomics* and *Teaching About Foreign Exchange***

SUGGESTED SKILL

Manipulation

3.B

Determine the effect(s) of one or more changes on other economic markets.

AVAILABLE RESOURCES

- External Resource > **Davidson Next AP Macroeconomics Course—Foreign Exchange Markets**
- Classroom Resources > **Mastering Economic Thinking Skills – *Focusing on the Phillips Curve and Exchange Rates in Macroeconomics*** and ***Teaching About Foreign Exchange***

TOPIC 6.6

Real Interest Rates and International Capital Flows

Required Course Content

ENDURING UNDERSTANDING

MKT-5

The interaction of buyers and sellers exchanging the currency of one country for the currency of another determines the equilibrium exchange rate in a flexible exchange market and influences the flow of goods, services, and financial capital between countries.

LEARNING OBJECTIVE

MKT-5.G

Explain (using graphs as appropriate) how differences in real interest rates across countries affect financial capital flows, foreign exchange markets, and loanable funds markets.

ESSENTIAL KNOWLEDGE

MKT-5.G.1

In an open economy, differences in real interest rates across countries change the relative values of domestic and foreign assets. Financial capital will flow toward the country with the relatively higher interest rate. [See EK MKT-4.E.2 and EK MEA-4.A.6 for explanations of the impact on the loanable funds market and on net exports.]

MKT-5.G.2

Central banks can influence the domestic interest rate in the short run, which in turn will affect net capital inflows.

AP Micro/Macroeconomics Final Project

Fill in the blank of the following sentence: The Economics of _____

Relate your topic to the use of 7 or more economic principles or concepts we have studied during the year and use 3 models to show how your topic fits into the micro and macroeconomic system.

EXAMPLES…

1. The economics of living in a small, or in a large family
2. The economics of eating 10 soft tacos
3. The economics of working part time
4. The economics of attending prom
5. The economics of driving _____ car
6. The economics of taking AP exams
7. The economics of playing soccer

You may choose a topic related to your life or one that holds your interest. Topics are to be non-typical economic issues, but the principles used must be economic.

OR…. choose a well-known topic that one may not necessarily address in economic terms and apply the economic principles you have learned this year.

EXAMPLES…

1. The economics of prison – think Bohemia Style Beer
2. The economics of a $15 minimum wage
3. The economics of government subsidies – climate change (because global warming didn't work), crops
4. The economics of the illegal weapons trade
5. The economics of an industry's salaries
6. The economics of a particular company
7. The economics of a particular country

This is meant to be fun and informative. **Choose a topic that interests you and that you want to learn more about.** This is not a ho-hum end-of-the –year project. School is not over and you haven't been dismissed. You fight to the bell. You will have class time to work on this. Learn something then educate the rest of us.

YOUR TASK…

1. Choose your topic and get teacher approval**. Decide how you want to present your topic. Part of the project will be a paper, but the rest is a presentation of your choice (my approval).**

- Part of the exam grade is your oral presentation on the semester exam date.
- You may use a poster, PowerPoint, flip chart, traditional report as part of your presentation.
- In your project, give a one paragraph (min. 7 sentences) description of your topic. Describe actions or things that are part of your topic.

2. Choose and include 7 concepts and principles that apply to your topic. Underline, **embolden**, or *italicize* these terms.

(a) define/describe each concept (min. 2 sentences)

EXAMPLES… opportunity cost, scarcity, supply/demand, resource cost, unanticipated inflation, interest, disposable income, taxes…

3. For each of the 7 concepts, explain how and/or why the concepts and principles apply to your topic.

Minimum 4 sentences for each concept/principle.
Making linkages between concepts or principles is a plus.
How do several concepts work together or counter each other?

4. Choose three models that help to illustrate how your topic fits into the macroeconomic picture.

EXAMPLES… circular flow model, production possibilities curve, supply/demand, aggregate supply/aggregate demand, business cycle foreign exchange. If taking the AP exam you also have loanable funds, money market, Philips Curve.

Use "before, change & what people will do (min. 5 sentences), after" analysis to show on the graph and explain how your topic affects the economy or what part your topic plays in the economy.

Grading Rubric **Name:**

The Economics of	Novice	Competent	Expert
Creativity & Description of the chosen topic 20 points	The topic is an economics principle studied in class or presentation is basic with minimum information **<12 points**	The topic meets requirements; presentation has interest and some creative features **13-16 points**	The topic has high interest & is described; presentation is well planned with many interesting features **17-20 points**
Seven economic principles and knowledge of the principles 60 points	There are less than 7 principles and/or the principles do not relate to the topic chosen; few are described or defined **<43 points**	There are 7 principles but a couple of principles do not relate to the topic chosen; one or two are missing content knowledge, demand/supply treated as two, instead of one concept **44-51 points**	There are 7 separate, principles, all of them directly relate to the topic chosen; description shows understanding of all the principles **52-60 points**
Application of the principles 60 points	Few of the principles are applied correctly to the topic **<43 points**	A majority of the principles are correctly applied to the topic; there is some attempt at making linkages among concepts **44-51 points**	All of the principles are correctly applied to the topic; there is linkage among concepts **52-60 points**
Graphing models and analysis 40 points	There are fewer than three graphs or none of the graphs have analysis or the analysis is basic without explanation **<26 points**	The three graphs each illustrate a different aspect of the topic. A least one graph is missing explanations or analysis **27-33 points**	The three graphs each illustrate a different aspect of the topic. Economic analysis is correct and include explanations (how & why) **34-40 points**
Oral presentation 20 points	Too little information is presented; it appears the student has little knowledge and understanding of the topic **<12 points**	A general idea is given of the topic and some explanation and understanding is evident **13-16 points**	Information presented shows detailed knowledge of the topic and economic principles **17-20 points**

DELAWARE VALLEY SCHOOL DISTRICT

Appendix

Name of Textbook: Name of Textbook: ***Krugman's Economics AP****

Textbook ISBN #: 978-1-4292-1872-6

Textbook Publisher & Year of Publication: Worth Publishers & 2011 Curriculum

Textbook is utilized in (title of course): AP Economics

Additional Materials and Resources:

Advanced Placement Economics Macroeconomics: Student Activities. Morton and Goodman. The Golden Sachs Foundation. Council for Economic Education. 2009 ISBN: 978-56183-567-6
Advanced Placement Economics Microeconomics: Student Activities. Morton and Goodman. The Golden Sachs Foundation. Council for Economic Education. 2003 ISBN: 1-56183-568-4
Multiple-Choice & Free-Response Questions in Preparation for the AP economics Examination. D&S Marketing Systems, Inc. 2007 ISBN: 0-9787199-8-0
Strive for a 5: Preparing for the Microeconomics AP* Examination. Worth Publishers/BFW. 2012 ISBN 10: 1-4292-6453-5
Strive for a 5: Preparing for the Macroeconomics AP* Examination. Worth Publishers/BFW. 2012 ISBN 10: 1429263598
Economics by Example. Worth Publishers. 2007 ISBN-13: 978-0-7167-6934-7