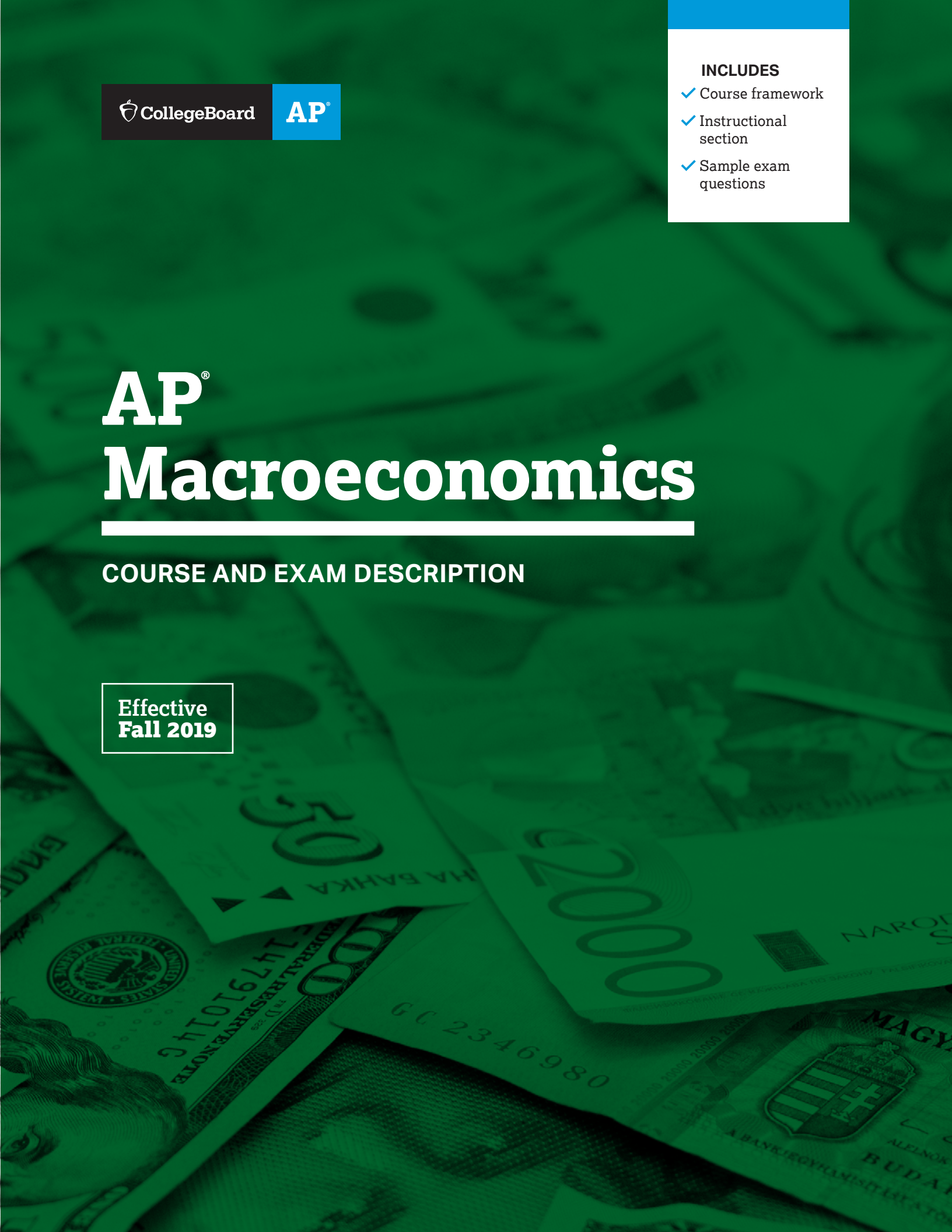
CollegeBoard AP

INCLUDES
- Course framework
- Instructional section
- Sample exam questions

AP® Macroeconomics

COURSE AND EXAM DESCRIPTION

Effective **Fall 2019**



AP® Macroeconomics

COURSE AND EXAM DESCRIPTION

Effective
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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.

About College Board

College Board is a mission-driven not-for-profit organization that connects students to college success and opportunity. Founded in 1900, College Board was created to expand access to higher education. Today, the membership association is made up of over 6,000 of the world's leading educational institutions and is dedicated to promoting excellence and equity in education. Each year, College Board helps more than seven million students prepare for a successful transition to college through programs and services in college readiness and college success—including the SAT® and the Advanced Placement® Program. The organization also serves the education community through research and advocacy on behalf of students, educators, and schools.

For further information, visit **collegeboard.org**.

AP Equity and Access Policy

College Board strongly encourages educators to make equitable access a guiding principle for their AP programs by giving all willing and academically prepared students the opportunity to participate in AP. We encourage the elimination of barriers that restrict access to AP for students from ethnic, racial, and socioeconomic groups that have been traditionally underrepresented. Schools should make every effort to ensure their AP classes reflect the diversity of their student population. College Board also believes that all students should have access to academically challenging coursework before they enroll in AP classes, which can prepare them for AP success. It is only through a commitment to equitable preparation and access that true equity and excellence can be achieved.

Designers: Sonny Mui and Bill Tully

Visit College Board on the web: **collegeboard.org**.

Contents

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Please note that the course framework included in this document was inspired by work originally undertaken by the AP Macroeconomics Curriculum Development and Assessment Committee.

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About AP

College Board's Advanced Placement® Program (AP®) enables willing and academically prepared students to pursue college-level studies—with the opportunity to earn college credit, advanced placement, or both—while still in high school. Through AP courses in 38 subjects, each culminating in a challenging exam, students learn to think critically, construct solid arguments, and see many sides of an issue—skills that prepare them for college and beyond. Taking AP courses demonstrates to college admission officers that students have sought the most challenging curriculum available to them, and research indicates that students who score a 3 or higher on an AP Exam typically experience greater academic success in college and are more likely to earn a college degree than non-AP students. Each AP teacher's syllabus is evaluated and approved by faculty from some of the nation's leading colleges and universities, and AP Exams are developed and scored by college faculty and experienced AP teachers. Most four-year colleges and universities in the United States grant credit, advanced placement, or both on the basis of successful AP Exam scores; more than 3,300 institutions worldwide annually receive AP scores.

AP Course Development

In an ongoing effort to maintain alignment with best practices in college-level learning, AP courses and exams emphasize challenging, research-based curricula aligned with higher education expectations.

Individual teachers are responsible for designing their own curriculum for AP courses, selecting appropriate college-level readings, assignments, and resources. This course and exam description presents the content and skills that are the focus of the corresponding college course and that appear on the AP Exam. It also organizes the content and skills into a series of units that represent a sequence found in widely adopted college textbooks and that many AP teachers have told us they follow in order to focus their instruction. The intention of this publication is to respect teachers' time and expertise by providing a roadmap that they can modify and adapt to their local priorities and preferences. Moreover, by organizing the AP course content and skills into units, the AP Program is able to provide teachers and students with formative assessments—Personal Progress Checks—that teachers can assign throughout the year to measure student progress as they acquire content knowledge and develop skills.

Enrolling Students: Equity and Access

College Board strongly encourages educators to make equitable access a guiding principle for their AP programs by giving all willing and academically prepared students the opportunity to participate in AP. We encourage the elimination of barriers that restrict access to AP for students from ethnic, racial, and socioeconomic groups that have been traditionally underserved. College Board also believes that all students should have access to academically challenging coursework before they enroll in AP classes, which can prepare them for AP success. It is only through a commitment to equitable preparation and access that true equity and excellence can be achieved.

Offering AP Courses: The AP Course Audit

The AP Program unequivocally supports the principle that each school implements its own curriculum that will enable students to develop the content understandings and skills described in the course framework.

While the unit sequence represented in this publication is optional, the AP Program does have a short list of curricular and resource requirements that must be fulfilled before a school can label a course "Advanced Placement" or "AP." Schools wishing to offer AP courses must participate in the AP Course Audit, a process through which AP teachers' course materials are reviewed by college faculty. The AP Course Audit was created to provide teachers and administrators with clear guidelines on curricular and resource requirements for AP courses and to help colleges and universities validate courses marked "AP" on students' transcripts. This process ensures that AP teachers' courses meet or exceed the curricular and resource expectations that college and secondary school faculty have established for college-level courses.

The AP Course Audit form is submitted by the AP teacher and the school principal (or designated administrator) to confirm awareness and understanding of the curricular and resource requirements. A syllabus or course outline, detailing how course requirements are met, is submitted by the AP teacher for review by college faculty.

Please visit **collegeboard.org/apcourseaudit** for more information to support the preparation and submission of materials for the AP Course Audit.

How the AP Program Is Developed

The scope of content for an AP course and exam is derived from an analysis of hundreds of syllabi and course offerings of colleges and universities. Using this research and data, a committee of college faculty and expert AP teachers work within the scope of the corresponding college course to articulate what students should know and be able to do upon the completion of the AP course. The resulting course framework is the heart of this course and exam description and serves as a blueprint of the content and skills that can appear on an AP Exam.

The AP Test Development Committees are responsible for developing each AP Exam, ensuring the exam questions are aligned to the course framework. The AP Exam development process is a multiyear endeavor; all AP Exams undergo extensive review, revision, piloting, and analysis to ensure that questions are accurate, fair, and valid, and that there is an appropriate spread of difficulty across the questions.

Committee members are selected to represent a variety of perspectives and institutions (public and private, small and large schools and colleges), and a range of gender, racial/ethnic, and regional groups. A list of each subject's current AP Test Development Committee members is available on **apcentral.collegeboard.org**.

Throughout AP course and exam development, College Board gathers feedback from various stakeholders in both secondary schools and higher education institutions. This feedback is carefully considered to ensure that AP courses and exams are able to provide students with a college-level learning experience and the opportunity to demonstrate their qualifications for advanced placement or college credit.

How AP Exams Are Scored

The exam scoring process, like the course and exam development process, relies on the expertise of both AP teachers and college faculty. While multiple-choice questions are scored by machine, the free-response questions and through-course performance assessments, as applicable, are scored by thousands of college faculty and expert AP teachers. Most are scored at the annual AP Reading, while a small portion is scored online. All AP Readers are thoroughly trained, and their work is monitored throughout the Reading for fairness and consistency. In each subject, a highly respected college faculty member serves as Chief Faculty Consultant and, with the help of AP Readers in leadership positions, maintains the accuracy of the scoring standards. Scores on the free-response questions and performance assessments are weighted and combined with the results of the computer-scored multiple-choice questions, and this raw score is converted into a composite AP score on a 1–5 scale.

AP Exams are **not** norm-referenced or graded on a curve. Instead, they are criterion-referenced, which means that every student who meets the criteria for an AP score of 2, 3, 4, or 5 will receive that score, no matter how many students that is. The criteria for the number of points students must earn on the AP Exam to receive scores of 3, 4, or 5—the scores that research consistently validates for credit and placement purposes—include:

- The number of points successful college students earn when their professors administer AP Exam questions to them.
- The number of points researchers have found to be predictive that an AP student will succeed when placed into a subsequent higher-level college course.
- Achievement-level descriptions formulated by college faculty who review each AP Exam question.

Using and Interpreting AP Scores

The extensive work done by college faculty and AP teachers in the development of the course and exam and throughout the scoring process ensures that AP Exam scores accurately represent students' achievement in the equivalent college course. Frequent and regular research studies establish the validity of AP scores as follows:

AP Score	Credit Recommendation	College Grade Equivalent
5	Extremely well qualified	A
4	Well qualified	A-, B+, B
3	Qualified	B-, C+, C
2	Possibly qualified	n/a
1	No recommendation	n/a

While colleges and universities are responsible for setting their own credit and placement policies, most private colleges and universities award credit and/or advanced placement for AP scores of 3 or higher. Additionally, most states in the U.S. have adopted statewide credit policies that ensure college credit for scores of 3 or higher at public colleges and universities. To confirm a specific college's AP credit/placement policy, a search engine is available at **apstudent.org/creditpolicies**

BECOMING AN AP READER

Each June, thousands of AP teachers and college faculty members from around the world gather for seven days in multiple locations to evaluate and score the free-response sections of the AP Exams. Ninety-eight percent of surveyed educators who took part in the AP Reading say it was a positive experience.

There are many reasons to consider becoming an AP Reader, including opportunities to:

- **Bring positive changes to the classroom:** Surveys show that the vast majority of returning AP Readers—both high school and college educators—make improvements to the way they teach or score because of their experience at the AP Reading.
- **Gain in-depth understanding of AP Exam and AP scoring standards:** AP Readers gain exposure to the quality and depth of the responses from the entire pool of AP Exam takers, and thus are better able to assess their students' work in the classroom.
- **Receive compensation:** AP Readers are compensated for their work during the Reading. Expenses, lodging, and meals are covered for Readers who travel.
- **Score from home:** AP Readers have online distributed scoring opportunities for certain subjects. Check **collegeboard.org/apreading** for details.
- **Earn Continuing Education Units (CEUs):** AP Readers earn professional development hours and CEUs that can be applied to PD requirements by states, districts, and schools.

How to Apply

Visit **collegeboard.org/apreading** for eligibility requirements and to start the application process.

AP Resources and Supports

By completing a simple activation process at the start of the school year, teachers and students receive access to a robust set of classroom resources.

AP Classroom

AP Classroom is a dedicated online platform designed to support teachers and students throughout their AP experience. The platform provides a variety of powerful resources and tools to provide yearlong support to teachers and enable students to receive meaningful feedback on their progress.

UNIT GUIDES

Appearing in this publication and on AP Classroom, these planning guides outline all required course content and skills, organized into commonly taught units. Each unit guide suggests a sequence and pacing of content, scaffolds skill instruction across units, organizes content into topics, and provides tips on taking the AP Exam.

PERSONAL PROGRESS CHECKS

Formative AP questions for every unit provide feedback to students on the areas where they need to focus. Available online, Personal Progress Checks measure knowledge and skills through multiple-choice questions with rationales to explain correct and incorrect answers, and free-response questions with scoring information. Because the Personal Progress Checks are formative, the results of these assessments cannot be used to evaluate teacher effectiveness or assign letter grades to students, and any such misuses are grounds for losing school authorization to offer AP courses.*

PROGRESS DASHBOARD

This dashboard allows teachers to review class and individual student progress throughout the year. Teachers can view class trends and see where students struggle with content and skills that will be assessed on the AP Exam. Students can view their own progress over time to improve their performance before the AP Exam.

AP QUESTION BANK

This online library of real AP Exam questions provides teachers with secure questions to use in their classrooms. Teachers can find questions indexed by course topics and skills, create customized tests, and assign them online or on paper. These tests enable students to practice and get feedback on each question.

*To report misuses, please call, 877-274-6474 (International: +1-212-632-1781).

Digital Activation

In order to teach an AP class and make sure students are registered to take the AP Exam, teachers must first complete the digital activation process. Digital activation gives students and teachers access to resources and gathers students' exam registration information online, eliminating most of the answer sheet bubbling that has added to testing time and fatigue.

AP teachers and students begin by signing in to **My AP** and completing a simple activation process at the start of the school year, which provides access to all AP resources, including AP Classroom.

To complete digital activation:

- Teachers and students sign in to or create their College Board accounts.
- Teachers confirm that they have added the course they teach to their AP Course Audit account and have had it approved by their school's administrator.
- Teachers or AP Coordinators, depending on who the school has decided is responsible, set up class sections so students can access AP resources and have exams ordered on their behalf.
- Students join class sections with a join code provided by their teacher or AP Coordinator.
- Students will be asked for additional registration information upon joining their first class section, which eliminates the need for extensive answer sheet bubbling on exam day.

While the digital activation process takes a short time for teachers, students, and AP Coordinators to complete, overall it helps save time and provides the following additional benefits:

- **Access to AP resources and supports:** Teachers have access to resources specifically designed to support instruction and provide feedback to students throughout the school year as soon as activation is complete.
- **Streamlined exam ordering:** AP Coordinators can create exam orders from the same online class rosters that enable students to access resources. The coordinator reviews, updates, and submits this information as the school's exam order in the fall.
- **Student registration labels:** For each student included in an exam order, schools will receive a set of personalized AP ID registration labels, which replaces the AP student pack. The AP ID connects a student's exam materials with the registration information they provided during digital activation, eliminating the need for pre-administration sessions and reducing time spent bubbling on exam day.
- **Targeted Instructional Planning Reports:** AP teachers will get Instructional Planning Reports (IPRs) that include data on each of their class sections automatically rather than relying on special codes optionally bubbled in on exam day.

Instructional Model

Integrating AP resources throughout the course can help students develop skills and conceptual understandings. The instructional model outlined below shows possible ways to incorporate AP resources into the classroom.

Plan

Teachers may consider the following approaches as they plan their instruction before teaching each unit.

- Review the overview at the start of each **unit guide** to identify essential questions, conceptual understandings, and skills for each unit.
- Use the **Unit at a Glance** table to identify related topics that build toward a common understanding, and then plan appropriate pacing for students.
- Identify useful strategies in the **Instructional Approaches** section to help teach the concepts and skills.

Teach

When teaching, supporting resources could be used to build students' conceptual understanding and their mastery of skills.

- Use the topic pages in the **unit guides** to identify the required content.
- Integrate the content with a skill, considering any appropriate scaffolding.
- Employ any of the instructional strategies previously identified.
- Use the available resources on the topic pages to bring a variety of assets into the classroom.

Assess

Teachers can measure student understanding of the content and skills covered in the unit and provide actionable feedback to students.

- At the end of each unit, use **AP Classroom** to assign students the online **Personal Progress Checks**, as homework or as an in-class task.
- Provide question-level feedback to students through answer rationales; provide unit- and skill-level feedback using the progress dashboard.
- Create additional practice opportunities using the **AP Question Bank** and assign them through **AP Classroom**.

About the AP Macroeconomics Course

AP Macroeconomics is a college-level course that introduces students to the principles that apply to an economic system as a whole. The course places particular emphasis on the study of national income and price-level determination. It also develops students' familiarity with economic performance measures, the financial sector, stabilization policies, economic growth, and international economics. Students learn to use graphs, charts, and data to analyze, describe, and explain economic concepts.

College Course Equivalent

AP Macroeconomics is equivalent to a one-semester introductory college course in economics.

Prerequisites

There are no prerequisites for AP Macroeconomics. Students should be able to read a college-level textbook and possess basic mathematics and graphing skills.

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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.

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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.

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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.	**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.			

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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.

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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.

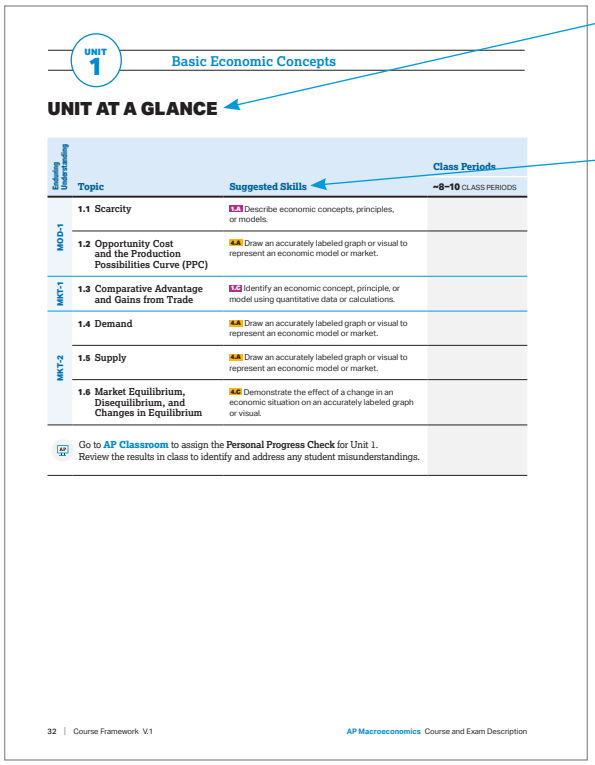
Another challenging concept for students is differentiating between movement along a curve and shifts of a curve. In the context of learning about the basic model of supply and demand in this unit, consider spending time helping students distinguish between the effects of a price change and changes in 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

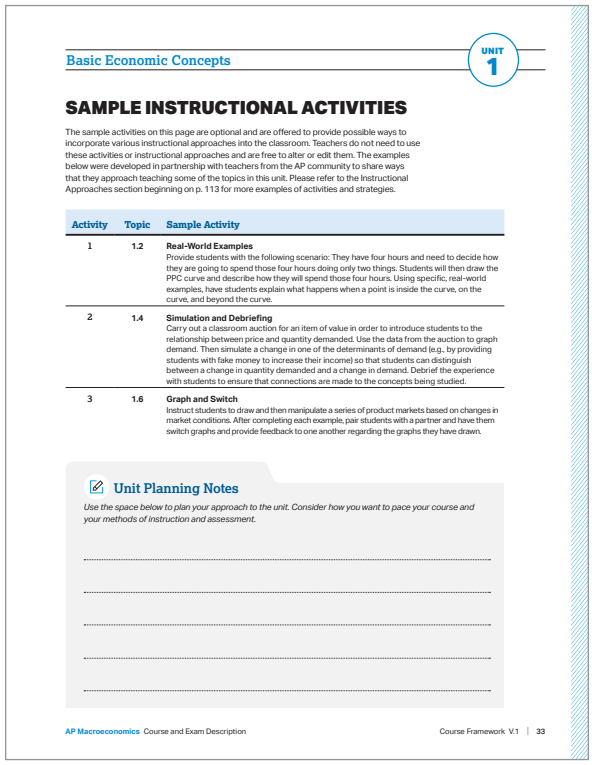
UNIT AT A GLANCE

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.

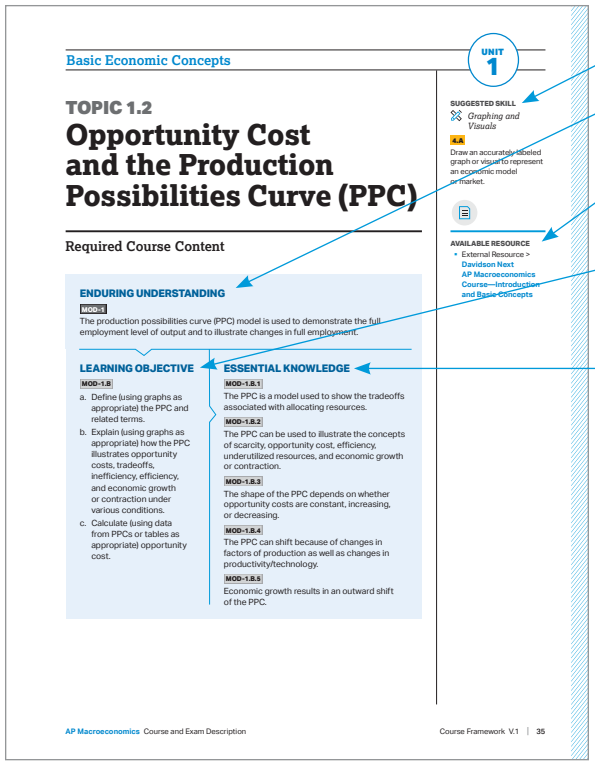
Activity	Topic	Sample Activity
1	1.2	**Real-World Examples** Provide students with the following scenario: They have four hours and need to decide how they are going to spend those four hours doing only two things. Students will then draw the PPC curve and describe how they will spend those four hours. 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.

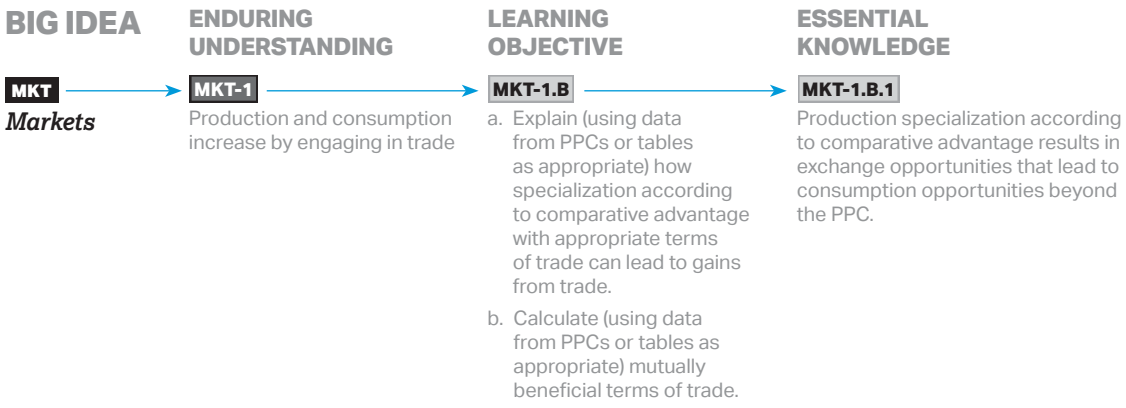
Enduring understandings are the long-term takeaways related to the big ideas that leave a lasting impression on students.

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.

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AP MACROECONOMICS

UNIT 1

Basic Economic Concepts

5–10%
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 1

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

- Short
- Short

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***

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AP MACROECONOMICS

UNIT 2

Economic Indicators and the Business Cycle

12–17%
AP EXAM WEIGHTING

~9–11
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 2

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

- Short
- Short

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

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

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

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

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AP MACROECONOMICS

UNIT 3

National Income and Price Determination

17–27%
AP EXAM WEIGHTING

~10–12
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 3

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

- Short
- Short

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.

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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.

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AP MACROECONOMICS

UNIT 4

Financial Sector

18–23%
AP EXAM WEIGHTING

~11–13
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: ~20 questions
Free-response: 2 questions

- Short
- Short

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 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 (e.g., **2016 AP Exam Free-Response Question #2**) 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 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 balance sheet accordingly. Debrief the experience with students to ensure that connections are made to the concepts being studied.
3	4.5, 4.7	**Practice Modeling** Both the money 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

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.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**

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**

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.

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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 > **Davidson Next AP Macroeconomics Course—Monetary Policy**
- Classroom Resources > **AP Macroeconomics 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 include open-market operations, the required reserve ratio, and the discount rate. The most frequently used monetary policy tool is open-market operations.

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

The effect of an open-market purchase (sale) on the money supply is greater than the effect on the monetary base because of the money multiplier.

POL-1.D.5

Many central banks carry out policy to hit a target range for an overnight interbank lending rate. (In the United States, this is the federal funds rate.)

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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.6** Central banks can influence the nominal interest rate in the short run by changing the money supply, which in turn will affect investment and consumption. [See also EK MKT-5.G.2 for the influence on net capital inflows.] **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 aggregate demand, real output, the price level, and interest rates. [See also EK MKT-5.E.3 for the effect on exchange rates.] **POL-1.D.9** A money market model and/or the AD–AS model are 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.

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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.

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AP MACROECONOMICS

UNIT 5

Long-Run Consequences of Stabilization Policies

20–30%
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 5

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

- Long

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 >
  - Davidson Next AP Macroeconomics Course—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.

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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

UNIT 5

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

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 6

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

- Long

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.

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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 MACROECONOMICS

Instructional Approaches

Selecting and Using Course Materials

Although a college-level textbook will cover the required course content, students should also examine alternative source material in different and varied forms to develop the habits of thinking like an economist.

Textbooks

The AP Macroeconomics course requires the use of a college-level textbook. It is unlikely that a high-school-level textbook will cover the content and skills of the course in the depth necessary to succeed on the AP Exam. It is important to select a textbook that covers the content of the AP Macroeconomics course as detailed in the course framework. Additionally, a textbook that emphasizes skill development will be helpful in providing students with opportunities to practice graphing, solving numerical problems, and explaining economic situations.

An **example textbook list** of college-level textbooks that meet the AP Course Audit resource requirements is provided on AP Central.

Quantitative Sources

College-level economics courses require students to engage with data in a variety of ways. New textbooks and publishers' resources often contain quantitative information presented via charts, graphs, or other infographics, but the data within them may quickly become out of date. The Federal Reserve Bank of St. Louis's **FRED Economic Data** is a good resource for current data to practice quantitative skills with students, as are government agencies such as the **Bureau of Labor Statistics (BLS)** and the **Bureau of Economic Analysis (BEA)**.

Secondary Sources

Supplementing the textbook with editorials, journal articles, news articles, and essays and books by economists can help bring course concepts to life and encourage students to think critically. Using a variety of sources that represent different points of view will engage students while enhancing learning.

Teaching the AP Economics Courses

The AP Macroeconomics course framework presents content in six units to be taught in a single semester. If a teacher is offering both AP Macroeconomics and AP Microeconomics with the same students over the course of two semesters and does not want to repeat the introductory material that is covered in both courses, they can use the AP Microeconomics course framework for Units 1 and 2. Following the AP Microeconomics course framework for the first two units will ensure coverage of topics that are included in the AP Microeconomics course (e.g., consumer choice theory, elasticity, etc.) but not the AP Macroeconomics course. From there, they can proceed to AP Macroeconomics Unit 2 or AP Microeconomics Unit 3, depending on which course they choose to teach first.

Course Framework Progression if Teaching...

AP Macroeconomics First	AP Microeconomics First
AP Microeconomics Unit 1	*AP Microeconomics Unit 1*
AP Microeconomics Unit 2	*AP Microeconomics Unit 2*
AP Macroeconomics Unit 2	*AP Microeconomics Unit 3*
AP Macroeconomics Unit 3	*AP Microeconomics Unit 4*
AP Macroeconomics Unit 4	*AP Microeconomics Unit 5*
AP Macroeconomics Unit 5	*AP Microeconomics Unit 6*
AP Macroeconomics Unit 6	*AP Macroeconomics Unit 2*
AP Microeconomics Unit 3	*AP Macroeconomics Unit 3*
AP Microeconomics Unit 4	*AP Macroeconomics Unit 4*
AP Microeconomics Unit 5	*AP Macroeconomics Unit 5*
AP Microeconomics Unit 6	*AP Macroeconomics Unit 6*

Instructional Strategies

The AP Macroeconomics course framework outlines the concepts and skills students need to master to be successful on the AP Exam. In order to address those concepts and skills effectively, it helps to incorporate a variety of instructional approaches into daily lessons and activities. The following table presents strategies that can help students apply their understanding of course concepts.

Strategy	Definition	Purpose	Example
Activating Prior Knowledge	Students recall what they already know about a concept and make connections to current studies.	To prepare students to establish content connections.	When the topic of economic growth comes up in a later part of the course, ask students to recall what they already learned about economic growth in the first unit in the context of learning about the production possibilities curve (PPC).
Ask the Expert	Students are assigned as "experts" on topics they have mastered. Groups rotate through the expert stations to learn about topics they have not yet mastered.	To provide opportunities for students to share their knowledge and learn from one another.	To work through the costs that unexpected inflation and deflation impose on individuals, assign students to represent a specific segment of the population (e.g., lenders, borrowers, individuals living on fixed incomes, etc.), each of which serves as a station. Have students rotate through the stations as each expert explains how unexpected inflation or deflation affects the segment that he or she is representing.
Debate	Students engage in an informal or a formal argumentation of an issue. The goal is to debate ideas without attacking the people who defend those ideas.	To provide students with an opportunity to collect and orally present evidence supporting the affirmative and negative arguments of a proposition or an issue.	Have students debate whether or not the United States should adopt a balanced budget amendment.

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Strategy	Definition	Purpose	Example
Discussion Groups	Students engage in an interactive, small-group discussion to consider a topic or question.	To gain new understanding or insight on a topic or question from multiple perspectives.	Assign students to mixed-ability groups to discuss the limitations of GDP.
Fishbowl	Students discuss specific topics within groups. Some students form the inner circle and model appropriate discussion techniques, while an outer circle of students listens, responds, and evaluates.	To provide students with an opportunity to engage in a formal discussion and to experience roles both as participant and active listener.	Have students discuss fiscal and/or monetary policy actions that address a specific economic situation (e.g., stagflation, a recession).
Graph and Switch	Students generate a graph and then switch papers or whiteboards to review each other's work.	To allow students to practice creating different representations and both give and receive immediate feedback.	Provide students with a given scenario (e.g., a given unemployment rate, a natural rate of unemployment, and an inflation rate) and ask students to draw a correctly labeled graph of the short-run and long-run Phillips curves. Have students switch papers and provide feedback on each other's work. Then change the situation (e.g., an increase in expected inflation) and repeat the exercise.
Group Presentation	Students work with their peers to prepare a presentation on a given topic and then disseminate information to their classmates.	To provide students with an opportunity to work with one another to synthesize information for the purpose of disseminating it to their peers.	Create small groups of students and assign each to a country (such as the United States or Japan) or a region (such as the European Union or Asia-Pacific Economic Cooperation) and ask them to prepare and deliver a presentation on how their country or region was affected by the Great Recession and what monetary and/or fiscal policy actions were undertaken. Have students include graphs in their presentation to describe the economic situation of their subject during the recession and the market impact of the fiscal and monetary policies.

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Strategy	Definition	Purpose	Example
Model Questions	Students answer questions from released AP Exams.	To provide rigorous practice and assess students' ability to respond to AP-level multiple-choice and free-response questions.	After teaching students about banking and the expansion of the money supply, provide an opportunity for students to practice answering a previous free-response question on the topic.
Numbered Heads Together	Each student is assigned a number. Members of a group work together to agree on an answer to a question you pose. Randomly select one number. The student with that number answers for the group.	To provide students with an opportunity to learn from one another and work together to reach a solution.	Use this strategy to work through a few problems that involve calculating and using multipliers.
Practice Modeling	Model techniques for the class. Students then practice using those techniques and gain feedback from their peers.	To learn from the teacher's example and then have opportunities for guided practice.	When introducing a new graph in the course, model it for students first by drawing it on the board, explaining what you are doing and why. Then provide an opportunity for students to practice generating the graph with appropriate labels themselves. Allow students to provide feedback to one another and circle the room to check for understanding.
QHT	Students expand their prior knowledge of vocabulary words by marking words with a Q, an H, or a T (Q signals words students have a question about; H signals words students have heard and might be able to identify; T signals words students know well enough to teach to their peers).	To allow students to build on their prior knowledge of words and to provide a forum for peer teaching and learning of new words.	When introducing financial assets, provide students with a list of critical vocabulary (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.

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Strategy	Definition	Purpose	Example
Real-World Examples	Teacher and students relate personal stories, examples, or anecdotes to illustrate key content.	To create relevance and personal meaning of economic terms and models, which can otherwise be very abstract for students.	Ask students to explain the trade-offs they face in their lives when choosing how to allocate the limited time they have before school. Connect the conversation to the concepts of scarcity and opportunity cost.
Simplify the Problem	Students use simpler numbers or examples to help solve a problem.	To provide insight into the strategies needed to solve the problem.	When introducing the idea of real versus nominal measures, provide students with a tangible example to which they can relate. One popular example involves looking at the highest grossing movies. Students can practice using the GDP deflator for those years to find which movie made the most money in real terms.
Simulation and Debriefing	Students assume the role of characters or economic agents in a simulation or case study. Students then discuss and reflect on the activity to clarify its purpose.	To help students better grasp a concept by participating in short, memorable experiences.	Carry out a classroom auction for an item of value in order to introduce students to the concept of demand. Debrief as a class to reflect on the purpose and meaning of the activity.
Socratic Seminar	This is a focused discussion in which students engage with open-ended questions tied to a specific topic or text. The discussion continues with student responses and, when needed, additional open-ended questions that allow students to express their ideas and engage in complex thinking.	To help students arrive at a new understanding by asking questions that clarify; challenge assumptions; question facts, reasons, and evidence; or examine implications and outcomes.	Have students participate in a Socratic seminar in order to explain GDP and how it is measured.

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Strategy	Definition	Purpose	Example
Systematic and Explicit Instruction	Instruction that involves a teacher demonstrating a specific plan for solving problem types and students using this plan to think their way through a solution.	To provide students with procedures and questions to ask when solving problems.	Demonstrate a specific plan for solving problems that ask students to determine appropriate terms of trade between two parties. Systematically walk through an example that involves first calculating the opportunity cost of producing each good or service and then evaluating that data to determine the range of values at which specialization and trade according to their comparative advantages would be beneficial to each party.
Think-Pair-Share	Students think through a problem alone, pair with a partner to share ideas, and then share results with the class.	To construct meaning about a topic or question by first developing ideas individually that are then tested and revised with a partner and the class.	Provide students with a worksheet that has a series of scenarios, some of which represent a change in supply or demand and some of which represent movement along a demand or supply curve. Have students complete the worksheet on their own and then pair with a partner to explain whether the situation represents a change in demand/supply or movement along a demand/supply curve. Have students share with the entire class.
Vocabulary Notebook	Using a designated format such as a notebook, journal or personal list to maintain an ongoing list of vocabulary words, definitions, and connection to academic study.	To facilitate and sustain a systematic process of vocabulary development.	Scarcity is the first topic of the course, and students will immediately be introduced to important economic terms that will come up throughout the course. Have students start a vocabulary notebook with definitions of key terms (e.g., scarcity, economics, land, labor, capital) and continue to add to their notebook with each new topic.

Developing Course Skills

Throughout the course, students will develop skills that are fundamental to the discipline of economics. Students will benefit from multiple opportunities to develop these skills in a scaffolded manner since they represent the complex skills that adept economists demonstrate.

The AP Macroeconomics course framework provides a suggested skill for each course topic. However, the suggested skill provided should not be the *only* one used to teach any given topic. One skill is provided as a starting point for thinking about how to approach teaching that topic, but it is important in the discipline of economics for students to be able to use all the skills. For example, "Topic 1.4: Demand" suggests skill "4.A: Draw an accurately labeled graph or visual to represent an economic model or market." When approaching the topic of demand, students will need to be able to draw a demand curve (Skill Category 4). However, within that given topic, students will also need to do things like describe the law of demand (Skill Category 1), explain what might have caused a shift in the demand curve (Skill Category 2), and predict and explain the result of a change in a determinant of demand (Skill Category 3).

The tables on the pages that follow look at each skill category and provide examples of questions for each skill, along with sample activities and strategies for incorporating that skill into the course.

Skill Category 1: Principles and Models—Define economic principles and models

Economics is grounded in a study of principles and models. Students must first be able to define economic concepts, principles, and models in order to apply them in context throughout the course.

Skill Category 1: *Principles and Models*

Skill	Key Questions	Sample Activities	Sample Instructional Strategies
1.A: *Describe economic concepts, principles, or models.*	▪ What are the key assumptions behind an economic concept, principle, or model? ▪ What are the characteristics and traits of this economic concept, principle, or model?	Have students take part in a simulation that demonstrates the relationships between households and businesses in order to describe the circular flow model.	▪ Simulation and Debriefing ▪ Practice Modeling
1.B: *Identify an economic concept, principle, or model illustrated by an example.*	▪ What economic concept, principle, or model is illustrated by this example?	Provide students with index cards describing the employment situation of different workers and have them identify the type of unemployment that each situation represents.	▪ Think-Pair-Share ▪ Vocabulary Notebook
1.C: *Identify an economic concept, principle, or model using quantitative data or calculations.*	▪ What economic concept, principle, or model does this quantitative data represent?	Work through example problems that ask students to identify who has an absolute advantage from given tables of data.	▪ Model Questions ▪ Simplify the Problem
1.D: *Describe the similarities, differences, and limitations of economic concepts, principles, or models.*	▪ What do these economic concepts, principles, or models have in common? ▪ In what ways do these economic concepts, principles, or models differ? ▪ What are the limitations of these economic concepts, principles, or models?	Have a discussion about the limitations of economic indicators.	▪ Discussion Groups ▪ Fishbowl

Skill Category 2: Interpretation—Explain given economic outcomes

Economists use their understanding of economic concepts, principles, and models to interpret economic situations. Students should be able to do the same in this course, inferring the cause of a given economic outcome by applying their understanding of course concepts.

Skill Category 2: *Interpretation*

Skill	Key Questions	Sample Activities	Sample Instructional Strategies
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.*	▪ What contributed to this outcome? ▪ What action should be taken to achieve this outcome?	After teaching students about the determinants of supply and demand, challenge students to come up with examples of changes within a given market that could explain given outcomes. Have students first come up with examples themselves, pair with a partner to share their ideas, and then share with the class.	▪ Think-Pair-Share ▪ Discussion Groups
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.*	▪ What combination of changes contributed to this outcome? ▪ What actions should be taken to achieve this outcome?	Assign students who have mastered an understanding of fiscal and monetary policy to a desired economic outcome, each of which serves as a station. Have students rotate through the stations to learn from the expert policy advisors what fiscal and monetary policy actions would be appropriate to take in order to achieve each economic outcome.	▪ Ask the Expert ▪ Model Questions
2.C: *Interpret a specific economic outcome using quantitative data or calculations.*	▪ What quantitative change will result in this outcome? ▪ What can you infer from this given quantitative data?	Provide students with a desired quantitative outcome (e.g., that policymakers want to increase aggregate demand by $100 billion) and the necessary data (e.g., the economy's marginal propensity to consume) to calculate the change in spending that policymakers should target to achieve their desired outcome. First demonstrate how to solve the problem and then give students an opportunity to solve similar problems.	▪ Systematic and Explicit Instruction ▪ Numbered Heads Together

Skill Category 3: Manipulation—Determine outcomes of specific economic situations

Economists are frequently asked to predict and explain what will happen as the result of policy actions or changes in economic situations. You can help students learn how to determine hypothetical outcomes through an application of the economic concepts, principles, and models covered in the course.

Skill Category 3: *Manipulation*

Skill	Key Questions	Sample Activities	Sample Instructional Strategies
3.A: *Determine the outcome of an economic situation using economic concepts, principles, or models.*	▪ What will happen in this situation? ▪ What will be the effect of this change or policy action?	Use a kinesthetic approach to demonstrate the outcome of a given economic situation. For example, when learning about the determinants of aggregate demand and short-run aggregate supply, you can set up labels around the room representing potential outcomes (e.g., increase in AD, decrease in AD, increase in SRAS, decrease in SRAS, no change in AD or SRAS). Provide students with an economic situation and ask them to walk to the appropriate place in the classroom representing the expected outcome.	▪ Think-Pair-Share ▪ Numbered Heads Together
3.B: *Determine the effect(s) of one or more changes on other economic markets.*	▪ How will this change affect this other market?	Model in class how to explain the steps in a chain of events. Stress that when asked to determine knock-on effects in other markets (e.g., when asked something like how a monetary policy action will affect that country's exchange rate), students should take care to include each step along the way and explain it in enough detail to clarify the reason for the subsequent change. Provide opportunities for students to practice with a past exam question.	▪ Practice Modeling ▪ Model Questions
3.C: *Determine the effect(s) of a change in an economic situation using quantitative data or calculations.*	▪ What is the quantitative effect of this change or policy action?	Participate in **"The Case of the Gigantic $100,000 Bill"** as a demonstration of the money creation process.	▪ Simulation and Debriefing ▪ Systematic and Explicit Instruction ▪ Model Questions

Skill Category 4: Graphing and Visuals—Model economic situations using graphs or visual representations

Graphs are important tools that economists use to represent economic situations and help predict and explain economic outcomes. Throughout the course, students should have ample practice using graphs to represent economic models and markets. They should learn that even when a graph is not asked for, drawing one can be an effective strategy for answering questions and reasoning through economic scenarios.

Skill Category 4: *Graphing and Visuals*

Skill	Key Questions	Sample Activities	Sample Instructional Strategies
4.A: *Draw an accurately labeled graph or visual to represent an economic model or market.*	▪ How do you graphically represent this economic model or market?	Model how to draw an accurately labeled AD–AS graph showing aggregate demand, short-run aggregate supply, equilibrium output, and equilibrium price level.	▪ Practice Modeling ▪ Graph and Switch ▪ Model Questions
4.B: *Demonstrate your understanding of a specific economic situation on an accurately labeled graph or visual.*	▪ How do you represent this specific economic situation on your graph?	Tell students that the economy is operating below full employment and ask them to demonstrate this situation on an AD–AS graph with a properly labeled long-run aggregate supply curve. Have students then switch papers and provide feedback on each other's graphs.	▪ Practice Modeling ▪ Graph and Switch ▪ Model Questions
4.C: *Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.*	▪ How do you represent the effect of this change on your graph?	Work together on a past free-response question that asks students to show the effect of a policy action on an AD–AS graph.	▪ Practice Modeling ▪ Graph and Switch ▪ Model Questions

AP MACROECONOMICS

Exam Information

Exam Overview

The AP Macroeconomics Exam assesses student understanding of the skills and learning objectives outlined in the course framework. The exam is 2 hours and 10 minutes long and includes 60 multiple-choice questions and 3 free-response questions. The details of the exam, including exam weighting and timing, can be found below:

Section	Question Type	Number of Questions	Exam Weighting	Timing
I	**Multiple-choice questions**	**60**	**66.65%**	**70 minutes**
II	**Free-response questions**	**3**	**33.35%**	**60 minutes** (includes a 10-minute reading period)
	Question 1: Long (10 points)			
	Question 2: Short (5 points)			
	Question 3: Short (5 points)			

The exam assesses content from the four big ideas for the course:
Big Idea 1: Economic Measurements
Big Idea 2: Markets
Big Idea 3: Macroeconomic Models
Big Idea 4: Macroeconomic Policies

The exam also assesses the six units of the course with the following exam weighting on the multiple-choice section:

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%**

How Student Learning Is Assessed on the AP Exam

The AP Economics skills are assessed on the AP Exam as detailed below.

Section I: Multiple-Choice

Skill Categories	Multiple-Choice Questions	
1: Principles and Models	30–40% of the multiple-choice questions assess students' ability to define economic principles and models. Students will need to describe and compare economic concepts, principles, and models. Additionally, students will need to identify economic concepts, principles, or models illustrated by an example.	**Numerical Analysis** Skill Categories 1, 2, and 3 all include skills that require analyzing numbers or performing calculations to identify economic concepts, principles, or models (Skill 1.C), to interpret outcomes (Skill 2.C), and to determine the effects of changes (Skill 3.C). 16–20% of total multiple-choice questions will include analyzing numbers or performing calculations.
2: Interpretation	25–32% of the multiple-choice questions assess students' ability to explain given economic outcomes. Students will need to explain how a specific economic outcome occurs, given one or more contributing variables, or what action(s) should be taken in order to achieve a specific economic outcome.	
3: Manipulation	30–40% of the multiple-choice questions assess students' ability to determine outcomes of specific economic situations. Students will need to use economic concepts, principles, or models to determine the outcome of an economic situation or determine the effects of one or more changes on other economic markets.	
4: Graphing and Visuals	Skill Category 4 is not assessed in multiple-choice questions since it requires students to draw a graph or visual representation, which can only be assessed on the free-response section of the exam. However, students will be expected to answer multiple-choice questions in which a graph or visual representation is provided.	

Section II: Free-Response

All four skill categories will be assessed in the three free-response questions, through four distinct types of tasks:

Make assertions about economic concepts, principles, models, outcomes, and/or effects: This task assesses skills in categories 1, 2, and 3 and accounts for 10–20% of total points in the free-response section.

Explain economic concepts, principles, models, outcomes and/or effects: This task assesses skills in categories 1, 2, and 3 and accounts for 25–35% of total points in the free-response section.

Perform numerical analysis: This task assesses student ability to make assertions that require numerical analysis or to perform calculations. This task assesses skills in categories 1, 2, or 3 and accounts for 10–25% of total points in the free-response section.

Create graphs or visual representations: This task assesses Skill Category 4 (Graphing and Visuals) and accounts for 30–50% of total points in the free-response section. This task requires students to do the following:

- Draw an accurately labeled graph or visual to represent an economic model or market (Skill 4.A)
- Demonstrate understanding of a specific economic situation on the accurately labeled graph or visual (Skill 4.B)
- Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual (Skill 4.C)

Task Verbs Used in Free-Response Questions

The following task verbs are commonly used in the free-response questions.

Identify. What? Which? Will? and other interrogatory words: Identify or provide information about a specified topic, without elaboration or explanation.

Explain: Provide information about how or why a relationship, pattern, position, situation, or outcome occurs, using evidence and/or reasoning. Graphs and symbols are acceptable as part of the explanation.

Calculate: Perform mathematical steps to arrive at a final answer. Showing work is required.

Draw a correctly labeled: Create a graph or visual representation that illustrates or explains relationships or phenomena. Labels are required.

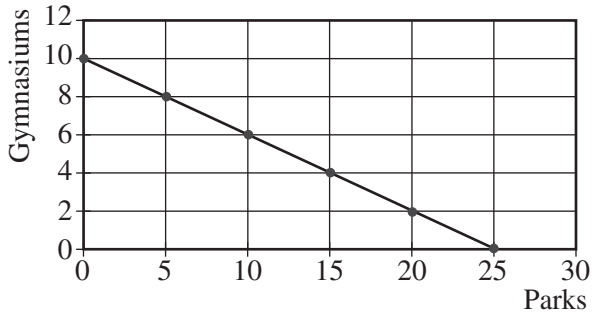
Show/Label/Plot/Indicate: Show, label, plot, or indicate an economic scenario on a graph or visual representation created by the student. Clearly labeling all axes and curves and showing directional changes where relevant is required.

Sample Exam Questions

The sample exam questions that follow illustrate the relationship between the course framework and the AP Macroeconomics Exam and serve as examples of the types of questions that appear on the exam. After the sample questions are tables that show which skill, learning objective(s), and unit each question relates to. The answers to the multiple-choice questions are also provided.

Section I: Multiple-Choice

The following are examples of the kinds of multiple-choice questions found on the exam.



1. The graph above shows the production possibilities curve for a small township that is deciding to build parks and gymnasiums. Which of the following combinations of parks and gymnasiums is unattainable given the township's available resources?
   (A) 5 parks and 6 gymnasiums
   (B) 5 parks and 8 gymnasiums
   (C) 10 parks and 6 gymnasiums
   (D) 15 parks and 4 gymnasiums
   (E) 20 parks and 4 gymnasiums

2. Which of the following changes would result in an indeterminate change in the equilibrium price in a perfectly competitive market?
   (A) An increase in demand and a decrease in supply
   (B) An increase in demand and an increase in supply
   (C) A decrease in demand and an increase in supply
   (D) A decrease in demand with no change in supply
   (E) A decrease in supply with no change in demand

3. Which of the following is accounted for in the calculation of a country's gross domestic product?
   (A) Sales of stocks and bonds
   (B) Changes in inventories
   (C) Changes in product quality
   (D) The underground economy
   (E) Nonmarket activities

4. The population of Country X is 250,000, and the labor force is 200,000 people. If 175,000 people are employed, what is the unemployment rate?
   (A) 10%
   (B) 12.5%
   (C) 20%
   (D) 80%
   (E) 87.5%

5. Which of the following will happen if the government raises both taxes and spending by $100 million and the marginal propensity to consume is 0.8?
   (A) Real GDP will decrease by a maximum of $500.
   (B) Real GDP will decrease by a maximum of $400.
   (C) Real GDP will increase by a maximum of $100.
   (D) Real GDP will increase by a maximum of $400.
   (E) Real GDP will increase by a maximum of $500.

6. Which of the following would lead to an increase in nominal interest rates?
   (A) An expansionary monetary policy accompanied by an increase in the demand for money
   (B) An expansionary monetary policy accompanied by a decrease in the demand for money
   (C) An expansionary monetary policy conducted without any change in the demand for money
   (D) A contractionary monetary policy accompanied by an increase in the demand for money
   (E) A contractionary monetary policy accompanied by a decrease in the demand for money

7. If the central bank seeks to increase the maximum amount by which the banking system can create loans with a given amount of reserves, it would
   (A) decrease government spending
   (B) reduce the reserve requirement
   (C) reduce the discount rate
   (D) sell government bonds
   (E) increase the federal funds rate

8. Assume the monetary base has increased as a result of actions taken by the central bank. Which of the following is a reason why an increase in the monetary base will not lead to the maximum possible increase in the money supply?
   (A) Banks hold excess reserves.
   (B) Banks lend out all excess reserves.
   (C) The increase in the monetary base crowds out investment spending.
   (D) The increase in the monetary base crowds out government spending.
   (E) People make no changes in their cash holdings.

9. An increase in the demand for loanable funds could be best explained by which of the following?
   (A) A decrease in investment spending.
   (B) An increase in the government's budget surplus.
   (C) An increase in firms' optimism about the future performance of the country's economy.
   (D) Domestic investors seeking higher returns by investing in foreign financial assets.
   (E) An increase in political instability in the country.

10. If both the money supply and government expenditures are reduced, what will most likely happen to interest rates and real gross domestic product (GDP) in the short run?
   (A) Both interest rates and real GDP will increase.
   (B) Both interest rates and real GDP will decrease.
   (C) Interest rates will decrease, and real GDP will stay the same.
   (D) Interest rates will increase, and real GDP will decrease.
   (E) Real GDP will decrease, and the change in interest rates will be indeterminate.

11. If an economy is currently in a recessionary gap, which of the following changes would result in an increase in real GDP in the short run and a decrease in the price level in the long run?
   (A) The government begins running a budget surplus.
   (B) There is an increase in real interest rates.
   (C) The government increases income tax rates.
   (D) There is an increase in the prices of the economy's productive resources.
   (E) There is an increase in the productivity of the economy's resources.

12. If the government offers a tax credit to businesses, what will be the most likely effects of this action?

(A) A decrease in consumption spending, an increase in aggregate demand, and an increase in real output

(B) An increase in consumption spending, a decrease in aggregate demand, and a decrease in real output

(C) An increase in investment spending, an increase in the capital stock, and an increase in real output

(D) A decrease in investment spending, a decrease in the capital stock, and an increase in real output

(E) A decrease in government spending, a decrease in aggregate demand, and a decrease in real output

13. If an economy experiences an improvement in technology, what will happen to its production possibilities curve (PPC) and its long-run aggregate supply (LRAS) curve?

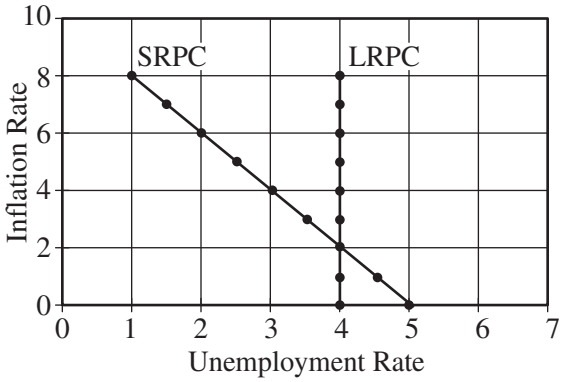
(A) Both curves shift inward.

(B) Both curves shift outward.

(C) The PPC shifts inward, and the LRAS curve stays the same.

(D) The PPC shifts outward, and the LRAS curve shifts inward.

(E) The PPC stays the same, and the LRAS curve shifts outward.



14. The diagram above shows the short-run Phillips curve (SRPC) and the long-run Phillips curve (LRPC) for an economy. If the rate of inflation is currently 6%, what is the current unemployment rate?

(A) The current unemployment rate is 1%.

(B) The current unemployment rate is 2%.

(C) The current unemployment rate is 3%.

(D) The current unemployment rate is 4%.

(E) The current unemployment rate is 5%.

15. If the United States budget deficit increases, what will most likely happen to the United States dollar in the foreign exchange market?
    (A) It will appreciate because interest rates will increase.
    (B) It will depreciate because interest rates will decrease.
    (C) It will appreciate because interest rates will decrease.
    (D) It will depreciate because interest rates will increase.
    (E) It will not change because changes in the government budget have no effect on the exchange rate.

Section II: Free-Response

The following are examples of the kinds of free-response questions found on the exam. Note that on the actual AP Exam, there will be one long free-response question worth 10 points and two short free-response questions, each worth 5 points.

1. Assume in the country of Zeetoland the expected inflation rate is 4%, the unemployment rate is 5%, the natural rate of unemployment is 6%, and the equilibrium real interest rate is 3%.
    (a) Draw a correctly labeled graph of the long-run aggregate supply, short-run aggregate supply, and aggregate demand curves, and show each of the following.
        (i) Current output, labeled Y_1
        (ii) Current price level, labeled PL_1
        (iii) Full employment output, labeled Y_F
    (b) The central bank is concerned about the buildup of inflationary pressures and wants to take a preemptive action to fight inflation. Identify one monetary policy action the central bank would take.
    (c) Based on the monetary policy action identified in part (b), will Zeetoland experience financial capital outflows or inflows? Explain.
    (d) Draw a correctly labeled graph of the foreign exchange market for Zeetoland's currency, the zeet, and show the effect of the monetary policy action identified in part (b) on the demand and the exchange rate for the zeet.
    (e) Based on the change in the exchange rate in part (d), what will happen to Zeetoland's net exports? Explain.
    (f) Assume instead the government of Zeetoland increases income taxes. On your graph in part (a), show the impact of the government's action in the short run on real output, labeled Y_2, and the price level, labeled PL_2.
    (g) Based solely on the change in real output in part (f), what will happen to the demand for money in Zeetoland?
    (h) Based on your answer to part (g), what will happen to nominal interest rates in Zeetoland?

2. Country X has a fractional reserve banking system. The reserve requirement is 25%, and the banks in Country X hold no excess reserves. Assume Mary deposits $100,000 in Bank A in Country X.
   (a) Calculate the maximum amount of loans that Bank A could make as a result of Mary's deposit. Show your work.
   (b) Calculate the maximum possible change in demand deposits in the banking system of Country X as a result of Mary's deposit. Show your work.
   (c) Is the maximum possible change in the money supply in the banking system of Country X greater than, less than, or equal to the maximum possible change in demand deposits identified in part (b) as a result of Mary's deposit? Explain.
   (d) Draw a correctly labeled graph of the money market. Show the effect of the change in the money supply identified in part (b) on the nominal interest rate.

Answer Key and Question Alignment to Course Framework

Multiple-Choice Question	Answer	Skill	Learning Objective	Unit
1	E	2.C	MOD-1.B	1
2	B	2.B	MKT-2.G	1
3	B	1.A	MEA-1.A	2
4	B	1.C	MEA-1.C	2
5	C	3.C	MOD-2.B, POL-1.A	3
6	D	2.B	POL-1.D, MKT-3.D	4
7	B	2.A	POL-1.D	4
8	A	2.A	POL-2.A	4
9	C	2.A	MKT-4.E	4
10	E	3.A	POL-1.F	5
11	E	2.A	MEA-2.B	5
12	C	3.A	POL-4.A	5
13	B	3.A	MOD-1.C	5
14	B	2.C	MOD-3.A	5
15	A	3.B	MKT-4.E, MKT-5.E	6

Free-Response Question	Question Type	Learning Objectives	Unit
1	Long	MOD-2.G, POL-1.D, MKT-3.D, MKT-5.G, MKT-5.C, MKT-5.E, MKT-5.F, POL-1.A	3, 4, 6
2	Short	POL-2.A, MKT-3.B, MKT-3.D	4

The scoring information for the questions within this course and exam description, along with further exam resources, can be found on the **AP Macroeconomics Exam Page** on AP Central.

AP MACROECONOMICS

Appendix

Appendix: AP Macroeconomics Conceptual Framework

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.

Enduring Understanding	Learning Objective	Essential Knowledge
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.*	**MEA-1.A** a. Define (using the circular flow diagram as appropriate) how GDP is measured and its components. b. Calculate nominal GDP.	**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.
	MEA-1.B Define the limitations of GDP.	**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.
	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.	**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.

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Big Idea 1: Economic Measurements (MEA) *cont'd*

Enduring Understanding	Learning Objective	Essential Knowledge
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.*	**MEA-1.E** a. Define the types of unemployment and the natural rate of unemployment. b. Explain changes in the types of unemployment.	**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.
	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.	**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 the CPI or 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.
	MEA-1.H Explain the costs that unexpected inflation (deflation) imposes on individuals and the economy.	**MEA-1.H.1** Unexpected inflation arbitrarily redistributes wealth from one group of individuals to another group, such as lenders to borrowers.

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Big Idea 1: Economic Measurements (MEA) *cont'd*

Enduring Understanding	Learning Objective	Essential Knowledge
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.*	**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.
MEA-2 *The economy fluctuates between periods of expansion and contraction in the short run, but economic growth can occur in the long run.*	**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.	**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]

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Big Idea 1: Economic Measurements (MEA) *cont'd*

Enduring Understanding	Learning Objective	Essential Knowledge
MEA-2 *The economy fluctuates between periods of expansion and contraction in the short run, but economic growth can occur in the long run.*	**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.	**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.
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.*	**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.	**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.

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Big Idea 1: Economic Measurements (MEA) *cont'd*

Enduring Understanding	Learning Objective	Essential Knowledge
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.*	**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.	**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.
	MEA-3.C a. Define money and its functions. b. Calculate (using data as appropriate) measures of money.	**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.
MEA-4 *Foreign trade accounting measures the flow of goods, services, and financial capital between countries.*	**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.	**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).

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.

Enduring Understanding	Learning Objective	Essential Knowledge
MKT-1 *Production and consumption increase by engaging in trade.*	**MKT-1.A** a. Define absolute advantage and comparative advantage. b. Determine (using data from PPCs or tables as appropriate) absolute and comparative advantage.	**MKT-1.A.1** Absolute advantage describes a situation in which an individual, a business, or a 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, a business, or a 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.
MKT-2 *In a competitive market, demand for and supply of a good or service determine the equilibrium price.*	**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.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 Explain (using graphs as appropriate) the determinants of demand.	**MKT-2.B.1** Factors that influence consumer demand, such as changes in consumer income, cause the market demand curve to shift.
	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.	**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.

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Big Idea 2: Markets (MKT) *cont'd*

Enduring Understanding	Learning Objective	Essential Knowledge
MKT-2 *In a competitive market, demand for and supply of a good or service determine the equilibrium price.*	**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 a market experiencing 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.
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.*	**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.

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Big Idea 2: Markets (MKT) *cont'd*

Enduring Understanding	Learning Objective	Essential Knowledge
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.*	**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.	**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.
MKT-4 *The interaction of borrowers, who demand loanable funds, and savers, who supply loanable funds, determines the equilibrium real interest rate.*	**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).	**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.
	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.

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Big Idea 2: Markets (MKT) *cont'd*

Enduring Understanding	Learning Objective	Essential Knowledge
MKT-4 *The interaction of borrowers, who demand loanable funds, and savers, who supply loanable funds, determines the equilibrium real interest rate.*	**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.
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.*	**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.	**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.
	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.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 Define (using graphs as appropriate) the equilibrium exchange rate.	**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.
	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.

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Big Idea 2: Markets (MKT) *cont'd*

Enduring Understanding	Learning Objective	Essential Knowledge
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.*	**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.	**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.
	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.	**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.]
	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.	**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.

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.

Enduring Understanding	Learning Objective	Essential Knowledge
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.*	**MOD-1.A** Define scarcity and economic resources.	**MOD-1.A.1** Individuals and societies are forced to make choices because most resources are scarce.
	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.	**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.
	MOD-1.C Explain (using graphs as appropriate) how the PPC is related to the long-run aggregate supply (LRAS) curve.	**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]
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.*	**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.	**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.

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Big Idea 3: Macroeconomic Models (MOD) *cont'd*

Enduring Understanding	Learning Objective	Essential Knowledge
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.*	**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.	**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.
	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.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 Explain (using graphs as appropriate) how movement along the SRAS curve implies a relationship between the price level (and inflation) and unemployment.	**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]
	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.

Big Idea 3: Macroeconomic Models (MOD) *cont'd*

Enduring Understanding	Learning Objective	Essential Knowledge
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.*	**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.
	MOD-2.G Explain (using graphs as appropriate) the short-run and long-run equilibrium price level and output level.	**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.
	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.	**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).
	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.	**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 (LRAS) curve indicate changes in the full-employment level of output and economic growth.

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Big Idea 3: Macroeconomic Models (MOD) *cont'd*

Enduring Understanding	Learning Objective	Essential Knowledge
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.*	**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.	**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.
	MOD-3.B Explain (using graphs as appropriate) the response of unemployment and inflation in the short run and in the long run.	**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.

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.

Enduring Understanding	Learning Objective	Essential Knowledge
POL-1 *Fiscal and monetary policy have short-run effects on macroeconomic outcomes.*	**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.	**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.
	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.
	POL-1.C a. Define automatic stabilizers. b. Explain how automatic stabilizers moderate business cycles.	**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.

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Big Idea 4: Macroeconomic Policies (POL) *cont'd*

Enduring Understanding	Learning Objective	Essential Knowledge
POL-1 *Fiscal and monetary policy have short-run effects on macroeconomic outcomes.*	**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.1** Central banks implement monetary policies to achieve macroeconomic goals, such as price stability.
		POL-1.D.2 The tools of monetary policy include open market operations, the required reserve ratio, and the discount rate. The most frequently-used monetary policy tool is open market operations.
		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 The effect of an open-market purchase (sale) on the money supply is greater than the effect on the monetary base because of the money multiplier.
		POL-1.D.5 Many central banks carry out policy to hit a target range for an overnight interbank lending 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 by changing the money supply, which in turn will affect investment and consumption. [See also EK MKT-5.G.2 for the influence on net capital inflows.]
		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 aggregate demand, real output, the price level, and interest rates. [See also EK MKT-5.E.3 for the effect on exchange rates.]
		POL-1.D.9 A money market model and/or the AD–AS model are 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.

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Big Idea 4: Macroeconomic Policies (POL) *cont'd*

Enduring Understanding	Learning Objective	Essential Knowledge
POL-1 *Fiscal and monetary policy have short-run effects on macroeconomic outcomes.*	**POL-1.F** Explain (using graphs as appropriate) the effects of combined fiscal and monetary policy actions.	**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.]
POL-2 *The banking system plays an important role in the expansion of the money supply.*	**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.	**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.

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Big Idea 4: Macroeconomic Policies (POL) *cont'd*

Enduring Understanding	Learning Objective	Essential Knowledge
POL-3 *There are long-run implications of monetary and fiscal policy.*	**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.	**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.
	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.	**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.]
	POL-3.C a. Define crowding out. b. Explain (using graphs as appropriate) how fiscal policy may cause crowding out.	**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.

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Big Idea 4: Macroeconomic Policies (POL) *cont'd*

Enduring Understanding	Learning Objective	Essential Knowledge
POL-4 *Authorities and organizations institute policies that affect economic growth.*	**POL-4.A** a. Explain (using graphs as appropriate) public policies aimed at influencing long-run economic growth. b. Define supply-side fiscal policies.	[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.

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