Advanced Placement Microeconomics	
CURRICULUM/CONTENT AREA	**COURSE LENGTH**
Social Studies	*1 Term*
GRADE LEVEL	**DATE LAST REVIEWED**
12	AP Micro Economics 12/2016 2021
PREREQUISITE(s) ***if applicable***	**BOARD APPROVAL DATE**
N/A	*July 13, 2021*
PRIMARY RESOURCE ***if applicable***	
McConnell, Brue, & Flynn (2018) Economics 18th Edition -and- The use of primary and secondary sources are built in each unit to support the priority standards -and- AP Classroom- the online platform designed to support teachers and students throughout their AP experience.	

Desired Results

COURSE DESCRIPTION AND PURPOSE
This course prepares the students to pass the Microeconomics Advanced Placement test in May and potentially earn college credit. Students who are considering studying business, education, law, pre-Med, or graduate school should take AP Economics to bolster their analytical skills. The course gives students a thorough understanding of the principles of economics that apply to the individual decision makers, both consumers and producers, within the larger economic system. It places primary emphasis on demand and supply theories, and how it influences the prices of goods and services, resources, interest rates, rents and wage levels. Students will gain an in depth understanding of the different types of competitive markets and how decisions are made in each type. The role government plays in regulating and promoting economic efficiency, equity and economic goals is analyzed in great depth.

BIG IDEAS *serve as the foundation of the course and allow students to create meaningful connections among concepts.*	**ESSENTIAL QUESTIONS** *are thought-provoking questions that motivate students and inspire inquiry.*
Big Idea 1: Scarcity and Markets--Limited resources and unlimited wants result in the need to make choices. In a market economy, the choices of buyers and sellers determine market prices and the allocation of scarce resources.	Why does resource scarcity force individuals and societies to make rational choices while taking into account the additional costs and benefits of their decisions?

Big Idea 2: Costs, Benefits, and Marginal Analysis--There are trade-offs associated with any decision. Making optimal decisions requires evaluating the additional costs and benefits of possible actions.	How does the interaction of consumers and producers in competitive markets determine market prices and result in the most efficient allocation of scarce resources?
Big Idea 3: Production Choices and Benefits--Firms seek to minimize costs and maximize profits, which influences their production decisions in the short run and long run.	What drives the decisions that firms make?
Big Idea 4: Market Inefficiency and Public Policy--Private markets can fail to allocate resources efficiently, and well-designed public policy can endeavor to promote greater efficiency and equity in the economy.	What are similarties and differences when modeling the monopoly, as well as a monopolistically competitive firm both in the short-run and at long-run equilibrium?
	Why in the factor markets do firms hire additional resources up to the point at which the resource's marginal revenue product is equal to its marginal resource cost.
	Under what conditions may markets fail, and what is the effectiveness of government policies designed to correct market failures?
COURSE SKILLS *The AP Economics skills describe what a student should be able to do while exploring course concepts.*	
Principles and Models--Define economic principles and models.	1.A Describe economic concepts, principles, or models. 1.B Identify an economic concept, principle, or model illustrated by an example. 1.C Identify an economic concept, principle, or model using quantitative data or calculations. 1.D Describe the similarities, differences, and limitations of economic concepts, principles, or models.

Interpretations--Explain given economic outcomes.	2.A Using economic concepts, principles, or models, explain how a specific economic outcome occurs or what action should be taken in order to achieve a specific economic outcome. 2.B Using economic concepts, principles, or models, explain how a specific economic outcome occurs when there are multiple contributing variables or what multiple actions should be taken in order to achieve a specific economic outcome. 2.C Interpret a specific economic outcome using quantitative data or calculations.
Manipulation--Determine outcomes of specific economic situations.	3.A Determine the outcome of an economic situation using economic concepts, principles, or models. 3.B Determine the effect(s) of one or more changes on other economic markets. 3.C Determine the effect(s) of a change in an economic situation using quantitative data or calculations.
Graphing and Visuals--Model economic situations using graphs or visual representations.	4.A Draw an accurately labeled graph or visual to represent an economic model or market. 4.B Demonstrate your understanding of a specific economic situation on an accurately labeled graph or visual. 4.C Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.

UNIT 1 BASIC ECONOMIC CONCEPTS	
BIG IDEA	**ESSENTIAL QUESTION**
BIG IDEA 1 Scarcity andMarkets BIG IDEA 2 Costs, Benefits, and Marginal Analysis	Why does resource scarcity force individuals and societies to make rational choices while taking into account the additional costs and benefits of their decisions?
COURSE SKILLS FOR UNIT	
Principles and Models--Define economic principles and models.	1.A Describe economic concepts, principles, or models. 1.C Identify an economic concept, principle, or model using quantitative data or calculations. 1.D Describe the similarities, differences, and limitations of economic concepts, principles, or models.
Interpretations--Explain given economic outcomes.	2.C Interpret a specific economic outcome using quantitative data or calculations.
Graphing and Visuals--Model economic situations using graphs or visual representations.	4.A Draw an accurately labeled graph or visual to represent an economic model or market.
ENDURING UNDERSTANDING *are the long-term takeaways related to the big ideas that leave a lasting impression on students.*	
Most resources are scarce, and in most cases the use of resources involves constraints and trade-offs. The consequences of scarcity can be mitigated through specialization in production and by exchange. Rational economic decisions require the evaluation of costs and benefits. To determine the optimal level at which to pursue an activity whose total benefits exceed total cost, rational economic agents compare marginal benefits and marginal costs.	
LEARNING OBJECTIVE	**ESSENTIAL KNOWLEDGE**

I CAN… Define resources and the cause(s) of their scarcity. Define how resource allocation is influenced by the economic system adopted by society. Define (using graphs as appropriate) the production possibilities curve (PPC) and related terms. Explain (using graphs as appropriate) how the production possibilities curve (PPC) illustrates opportunity costs, trade-offs, inefficiency, efficiency, and economic growth or contraction under various conditions. Calculate (using data from PPCs or tables as appropriate) opportunity cost. Define absolute advantage and comparative advantage. Determine (using data from PPCs or tables as appropriate) absolute and comparative advantage. 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. Calculate (using data from PPCs or tables as appropriate) mutually beneficial terms of trade. Define opportunity cost. Explain the opportunity costs associated with choices. Calculate the opportunity costs associated with choices. Explain a decision by comparing total benefits and total costs (using a table or a graph when appropriate). Calculate total benefits and total costs (using a table or graph where appropriate). Define the key assumptions of consumer choice theory.	Economic trade-offs arise from the lack of sufficient resources (scarcity) to meet society's wants and needs. Most factors of production (such as land, labor, and capital) are scarce, but some factors of production (such as established knowledge) may not be scarce due to their non-rival nature. Resource allocation involves answering three basic questions: What goods and services to produce? How to produce those goods and services? And who consumes those goods and services? Resource allocation is significantly influenced by the economic system adopted by society, such as command economy, market economy, or mixed economy. Each system involves a particular set of institutional arrangements and a coordinating mechanism for allocating scarce resources and distributing output. The PPC is a model used to show the trade-offs associated with allocating resources. The PPC can be used to illustrate the concepts of scarcity, opportunity cost, efficiency, underutilized resources, and economic growth or contraction. The shape of the PPC depends on whether opportunity costs are constant, increasing, or decreasing. The PPC can shift due to changes in factors of production as well as changes in productivity/technology. Economic growth results in an outward shift of the PPC. 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. 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. Production specialization according to comparative advantage, not absolute advantage, results in exchange opportunities that lead to consumption possibilities beyond the PPC. Comparative advantage and opportunity costs determine the terms of trade for exchange under which mutually beneficial trade can occur. Rational agents consider opportunity costs, whether implicit or explicit, when calculating the total economic costs of any decision. Total benefits form the metric "utility" for consumers and total revenue for firms. Total net benefits, the difference between total benefits and total costs, are maximized at the optimal choice. Some decisions permit rational agents to look at only marginal benefit and marginal cost. Other decisions cannot be broken down into increments in this way and must be evaluated by looking at total benefits and total costs. Consumers face constraints and have to make optimal decisions accounting for these constraints.
FORMATIVE ASSESSMENT TASK	**SUMMATIVE ASSESSMENT TASKS**

The following tasks use debates, real-world examples, modeling, response groups, simulations, and think-pair-shares. Have students take part in a classroom auction that demonstrates the law of demand. Provide students with a series of market-failure scenarios and have them identify the type of market failure described in each. Work through example problems that ask students to identify who has an absolute advantage from given tables of data. Have students describe the similarities and differences between different market structures. After teaching students about positive and negative externalities and the resulting inefficiencies, provide students with a series of externality scenarios and ask them to provide appropriate policy solutions for each scenario. Provide students with complex scenarios involving multiple market imperfections; for example, a monopoly with a negative externality. Provide students with data on a sample firm's fixed and variable costs at varied levels of output as well as marginal revenues. Ask students to calculate profit-maximizing output for the firm. Provide students with a reading or video explaining a realworld economic problem. Ask students to analyze various policy choices using economic models and predict the outcome of each. Model in class how to explain the steps in a chain of events. Stress that when asked to determine effects in other markets (e.g., when asked how a change in the price of corn will affect ethanol markets and wheat markets), 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. Ask students to predict firm behavior in a game theory scenario and then ask students to revise the provided matrix to include a tax or subsidy that affects some of the payoffs. Ask students to predict the impact on firm behavior using data from the new matrix. Participate in a market simulation (wheat market, cocoa market, etc.) to demonstrate the interaction of buyers and sellers. Following the simulation, ask students to graph the data from the individual buyer and seller cards to derive supply and demand curves. Ask students to draw a graph representing a retail clothing firm earning short-run profits in monopolistic competition. Ask students to work in groups to answer a past free-response question that asks students to show the effect of a price floor or ceiling in a perfectly competitive market.	Summative assessment tasks include College Board AP style exam questions (including free response questions and multiple choice questions).

UNIT 2 SUPPLY AND DEMAND	
BIG IDEA	**ESSENTIAL QUESTION**
BIG IDEA 1 Scarcity and Markets BIG IDEA 4 Market Inefficiency and Public Policy	How does the interaction of consumers and producers in competitive markets determine market prices and result in the most efficient allocation of scarce resources?
COURSE SKILLS FOR UNIT	
Interpretations--Explain given economic outcomes.	2.A Using economic concepts, principles, or models, explain how a specific economic outcome occurs or what action should be taken in order to achieve a specific economic outcome.
Manipulation--Determine outcomes of specific economic situations.	3.A Determine the outcome of an economic situation using economic concepts, principles, or models. 3.C Determine the effect(s) of a change in an economic situation using quantitative data or calculations.
Graphing and Visuals--Model economic situations using graphs or visual representations.	4.A Draw an accurately labeled graph or visual to represent an economic model or market. 4.C Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.
ENDURING UNDERSTANDING	
Individuals and firms respond to incentives and face constraints. Government policies influence consumer and producer behavior and therefore affect market outcomes.	
LEARNING OBJECTIVE	**ESSENTIAL KNOWLEDGE**

I CAN... Define (using graphs as appropriate) key terms and factors related to consumer decision making and the law of demand. Explain (using graphs as appropriate) the relationship between price and quantity demanded and how buyers respond to incentives and constraints. Define (using graphs as appropriate) the law of supply. Explain (using graphs as appropriate) the relationship between price and quantity supplied. Define measures of elasticity. Explain (using graphs where appropriate) measures of elasticity and the impact of a given price change on total revenue or total expenditure. Calculate (using data from a graph or a table as appropriate) measures of elasticity. Define measures of elasticity. Explain (using graphs where appropriate) measures of elasticity and the impact of a given price change on total revenue or total expenditure. Calculate (using data from a graph or a table as appropriate) measures of elasticity. Define forms of government price and quantity intervention. Explain (using graphs where appropriate) how government policies alter consumer and producer behaviors that influence incentives and therefore affect outcomes. Calculate (using data from a graph or table where appropriate) changes in market outcomes resulting from government policies.	A well-defined system of property rights is necessary for the market system to function well. Economic agents respond to incentives. Individuals often respond to incentives, such as those presented by prices, but also face constraints, such as income, time, and legal and regulatory frameworks. The law of demand suggests that a change in the own-price causes a change in quantity demanded in the opposite direction and a movement along a demand (marginal benefit) curve. The conceptual relationship between price and quantity stated by the law of demand leads to downward-sloping demand curves explained by the income effect and substitution effect and/or by diminishing marginal utility. A change in own-price causes a change in quantity supplied in the same direction and a movement along a supply curve. The market supply curve (schedule) is derived from the summation of individual supply curves (schedules). The market supply curve is upward-sloping. Economists use the concept of elasticity to measure the magnitude of percentage changes in quantity owing to any given changes in the own-price, income, and prices of related goods. Price elasticity of demand is measured by the percentage change in quantity demanded divided by the percentage change in price or the responsiveness of the quantity demanded to changes in price. Elasticity varies along a linear demand curve, meaning slope is not elasticity. Price elasticity of supply is measured by the percentage change in quantity supplied divided by the percentage change in price, or the responsiveness of the quantity supplied to changes in price. Ranges of values of elasticity of supply are described as elastic or inelastic with the separating benchmark being a magnitude of 1, where the change in the price and the change in the quantity supplied are proportional. Some government policies, such as price floors, price ceilings, and other forms of price and quantity regulation, affect incentives and outcomes in all market structures. Governments use taxes and subsidies to change incentives in ways that influence consumer and producer behavior, shifting the supply and demand curves accordingly. Taxes and subsidies affect government revenues or costs. Government intervention in a market producing the efficient quantity through taxes, subsidies, price controls, or quantity controls can only decrease allocative efficiency.
FORMATIVE ASSESSMENT TASK	SUMMATIVE ASSESSMENT TASKS

The following tasks use debates, real-world examples, modeling, response groups, simulations, and think-pair-shares. Have students take part in a classroom auction that demonstrates the law of demand. Provide students with a series of market-failure scenarios and have them identify the type of market failure described in each. Work through example problems that ask students to identify who has an absolute advantage from given tables of data. Have students describe the similarities and differences between different market structures. After teaching students about positive and negative externalities and the resulting inefficiencies, provide students with a series of externality scenarios and ask them to provide appropriate policy solutions for each scenario. Provide students with complex scenarios involving multiple market imperfections; for example, a monopoly with a negative externality. Provide students with data on a sample firm's fixed and variable costs at varied levels of output as well as marginal revenues. Ask students to calculate profit-maximizing output for the firm. Provide students with a reading or video explaining a realworld economic problem. Ask students to analyze various policy choices using economic models and predict the outcome of each. Model in class how to explain the steps in a chain of events. Stress that when asked to determine effects in other markets (e.g., when asked how a change in the price of corn will affect ethanol markets and wheat markets), 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. Ask students to predict firm behavior in a game theory scenario and then ask students to revise the provided matrix to include a tax or subsidy that affects some of the payoffs. Ask students to predict the impact on firm behavior using data from the new matrix. Participate in a market simulation (wheat market, cocoa market, etc.) to demonstrate the interaction of buyers and sellers. Following the simulation, ask students to graph the data from the individual buyer and seller cards to derive supply and demand curves. Ask students to draw a graph representing a retail clothing firm earning short-run profits in monopolistic competition. Ask students to work in groups to answer a past free-response question that asks students to show the effect of a price floor or ceiling in a perfectly competitive market.	Summative assessment tasks include College Board AP style exam questions (including free response questions and multiple choice questions).

UNIT 3 PRODUCTION, COSTS, AND PERFECT COMPETITION MODEL	
BIG IDEA	**ESSENTIAL QUESTION**
BIG IDEA 2 Costs, Benefits, and Marginal Analysis BIG IDEA 3 Production Choices and Behavior	What drives the decisions that firms make?
COURSE SKILLS FOR UNIT	
Principles and Models--Define economic principles and models.	1.A Describe economic concepts, principles, or models. 1.C Identify an economic concept, principle, or model using quantitative data or calculations. 1.D Describe the similarities, differences, and limitations of economic concepts, principles, or models.
Interpretations--Explain given economic outcomes.	2.A Using economic concepts, principles, or models, explain how a specific economic outcome occurs or what action should be taken in order to achieve a specific economic outcome.
Graphing and Visuals--Model economic situations using graphs or visual representations.	4.A Draw an accurately labeled graph or visual to represent an economic model or market.
ENDURING UNDERSTANDING	
Firms' production and cost constraints over different input and output levels shape optimal decisions in the short run and long run. To determine the optimal level at which to pursue an activity whose total benefits exceed total cost, rational economic agents compare marginal benefits and marginal costs. Firms' short-run decisions to produce output, and long run decisions to enter or exit a market, are based on profitability. Even with a common goal of profit-maximization, market structure constrains and influences prices, output, and efficiency.	
LEARNING OBJECTIVE	**ESSENTIAL KNOWLEDGE**

I CAN... Define (using graphs where appropriate) key terms and concepts relating to production and cost. Explain (using graphs where appropriate) how production and cost are related in the short run and long run. Calculate (using data from a graph or table as appropriate) the various measures of productivity and short-run and long-run costs. Define the different types of profit. Explain how firms respond to profit opportunities. Calculate a firm's profit or loss. Define (using graphs or data as appropriate) the profit-maximizing rule. Explain (using a graph or data as appropriate) the profit-maximizing level of production. Explain (using graphs or data where appropriate) firms' short-run decisions to produce positive output levels, or long-run decisions to enter or exit a market in response to profit-making opportunities. Define (using graphs as appropriate) the characteristics of perfectly competitive markets and efficiency. Explain (using graphs where appropriate) equilibrium and firm decision making in perfectly competitive markets and how prices in perfectly competitive markets lead to efficient outcomes. Calculate (using data from a graph or table as appropriate) economic profit (loss) in perfectly competitive markets.	The production function explains the relationship between inputs and outputs both in the short run and the long run. Marginal product and average product change as input usage changes, and hence, total product changes. Diminishing marginal returns occur as the firm employs more of one input, holding other inputs constant, to produce a product (output) in the short run. Fixed costs and variable costs determine the total cost. Marginal cost, average (fixed, variable, and total) cost, total cost, and total variable cost change as total output changes, but total fixed cost remains constant at all output levels, including zero output. Production functions with diminishing marginal returns yield an upward-sloping marginal cost curve. Specialization and the division of labor reduce marginal costs for firms. Cost curves can shift in response to changes in input costs and productivity. In the long run, firms can adjust all their inputs, and as a result, all costs become variable. The relationship between inputs and outputs in the long run is described by the scale of production—increasing, decreasing, or constant returns to scale. The long-run average total cost is characterized by economies of scale, diseconomies of scale, or constant returns to scale (efficient scale). The minimum efficient scale plays a role in determining the concentration of firms in a market and the market structure. Firms respond to economic profit (loss) rather than accounting profit. Accounting profit fails to account for implicit costs (such as cost of financial capital, compensation for risk, or an entrepreneur's time), which, if fully compensated, result in normal profit. Firms are assumed to produce output to maximize their profits by comparing marginal revenue and marginal cost. In the short run, firms decide to operate (i.e., produce positive output) or shut down (i.e., produce zero output) by comparing total revenue to total variable cost or price to average variable cost (AVC). In the absence of barriers to entry or exit, in the long run (i.e., once factors that are fixed in the short run become variable), firms enter a market in which there are profit-making opportunities and exit a market when they anticipate economic losses. A perfectly competitive market is efficient. Firms in perfectly competitive markets face no barriers to entry and have no market power. In perfectly competitive markets, prices communicate to consumers and producers the magnitude of others' marginal costs of production and marginal benefits of consumption and provide incentives to act on that information (i.e., price equals marginal cost in an efficient market). In perfectly competitive markets, firms can sell all their outputs at a constant price determined by the market. At a competitive market equilibrium, firms are price takers and select output to maximize profit by producing the level of output where the marginal cost equals marginal revenue (at the price).
FORMATIVE ASSESSMENT TASK	**SUMMATIVE ASSESSMENT TASKS**

The following tasks use debates, real-world examples, modeling, response groups, simulations, and think-pair-shares. Have students take part in a classroom auction that demonstrates the law of demand. Provide students with a series of market-failure scenarios and have them identify the type of market failure described in each. Work through example problems that ask students to identify who has an absolute advantage from given tables of data. Have students describe the similarities and differences between different market structures. After teaching students about positive and negative externalities and the resulting inefficiencies, provide students with a series of externality scenarios and ask them to provide appropriate policy solutions for each scenario. Provide students with complex scenarios involving multiple market imperfections; for example, a monopoly with a negative externality. Provide students with data on a sample firm's fixed and variable costs at varied levels of output as well as marginal revenues. Ask students to calculate profit-maximizing output for the firm. Provide students with a reading or video explaining a realworld economic problem. Ask students to analyze various policy choices using economic models and predict the outcome of each. Model in class how to explain the steps in a chain of events. Stress that when asked to determine effects in other markets (e.g., when asked how a change in the price of corn will affect ethanol markets and wheat markets), 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. Ask students to predict firm behavior in a game theory scenario and then ask students to revise the provided matrix to include a tax or subsidy that affects some of the payoffs. Ask students to predict the impact on firm behavior using data from the new matrix. Participate in a market simulation (wheat market, cocoa market, etc.) to demonstrate the interaction of buyers and sellers. Following the simulation, ask students to graph the data from the individual buyer and seller cards to derive supply and demand curves. Ask students to draw a graph representing a retail clothing firm earning short-run profits in monopolistic competition. Ask students to work in groups to answer a past free-response question that asks students to show the effect of a price floor or ceiling in a perfectly competitive market.	Summative assessment tasks include College Board AP style exam questions (including free response questions and multiple choice questions).

UNIT 3 IMPERFECT COMPETITION	
BIG IDEA	**ESSENTIAL QUESTION**
BIG IDEA 3 Production Choices and Behavior	What are similarties and differences when modeling the monopoly, as well as a monopolistically competitive firm both in the short-run and at long-run equilibrium?
COURSE SKILLS FOR UNIT	
Principles and Models--Define economic principles and models.	1.D Describe the similarities, differences, and limitations of economic concepts, principles, or models.
Interpretations--Explain given economic outcomes.	2.C Interpret a specific economic outcome using quantitative data or calculations.
Graphing and Visuals--Model economic situations using graphs or visual representations.	4.B Demonstrate your understanding of a specific economic situation on an accurately labeled graph or visual. 4.C Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.
ENDURING UNDERSTANDING	
Even with a common goal of profit-maximization, market structure constrains and influences prices, output, and efficiency.	
LEARNING OBJECTIVE	**ESSENTIAL KNOWLEDGE**

I CAN... Define (using graphs where appropriate) the characteristics of imperfectly competitive markets and inefficiency. Explain (using graphs where appropriate) equilibrium, firm decision making, consumer surplus, producer surplus, profit (loss), and deadweight loss in imperfectly competitive markets and why prices in imperfectly competitive markets cannot be relied on to coordinate the actions of all possible market participants and can lead to inefficient outputs. Calculate (using data from a graph or table as appropriate) areas of consumer surplus, producer surplus, profit (loss), and deadweight loss in imperfectly competitive markets.	Imperfectly competitive markets include monopoly, oligopoly, and monopolistic competition in product markets and monopsony in factor markets. In imperfectly competitive output markets and assuming all else is constant, a firm must lower price to sell additional units. In imperfectly competitive markets, consumers and producers respond to prices that are above the marginal costs of production and/or marginal benefits of consumption (i.e., price is greater than marginal cost in an inefficient market). Incentives to enter an industry may be mitigated by barriers to entry. Barriers to entry—such as high fixed/start-up costs, legal barriers to entry, and exclusive ownership of key resources—can sustain imperfectly competitive market structures. A monopoly exists because of barriers to entry. In a monopoly, equilibrium (profit-maximizing) quantity is determined by equating marginal revenue (MR) to marginal cost (MC). The price charged is greater than the marginal cost. In a natural monopoly, long-run economies of scale for a single firm exist throughout the entire effective demand of its product. A firm with market power can engage in price discrimination to increase its profits or capture additional consumer surplus under certain conditions. With perfect price discrimination, a monopolist produces the quantity where price equals marginal cost (just as a competitive market would) but extracts all economic surplus associated with it product and eliminates all deadweight loss. In a market with monopolistic competition, firms producing differentiated products may earn positive, negative, or zero economic profit in the short run. Firms typically use advertising as a means of differentiating their product. Free entry and exit drive profits to zero in the long run. The output level, however, is smaller than the output level needed to minimize average total costs, creating excess capacity. The price is greater than marginal cost, creating allocative inefficiency. An oligopoly is an inefficient market structure with high barriers to entry, where there are few firms acting interdependently. Firms in an oligopoly have an incentive to collude and form cartels. A game is a situation in which a number of individuals take actions, and the payoff for each individual depends directly on both the individual's own choice and the choices of others. A strategy is a complete plan of actions for playing a game; the normal form model of a game shows the payoffs that result from each collection of strategies (one for each player). A player has a dominant strategy when the payoff to a particular action is always higher independent of the action taken by the other player. A Nash equilibrium is a condition describing the set of actions in which no player can increase his or her payoff by unilaterally taking another action, given the other players' actions.
FORMATIVE ASSESSMENT TASK	**SUMMATIVE ASSESSMENT TASKS**

The following tasks use debates, real-world examples, modeling, response groups, simulations, and think-pair-shares. Have students take part in a classroom auction that demonstrates the law of demand. Provide students with a series of market-failure scenarios and have them identify the type of market failure described in each. Work through example problems that ask students to identify who has an absolute advantage from given tables of data. Have students describe the similarities and differences between different market structures. After teaching students about positive and negative externalities and the resulting inefficiencies, provide students with a series of externality scenarios and ask them to provide appropriate policy solutions for each scenario. Provide students with complex scenarios involving multiple market imperfections; for example, a monopoly with a negative externality. Provide students with data on a sample firm's fixed and variable costs at varied levels of output as well as marginal revenues. Ask students to calculate profit-maximizing output for the firm. Provide students with a reading or video explaining a realworld economic problem. Ask students to analyze various policy choices using economic models and predict the outcome of each. Model in class how to explain the steps in a chain of events. Stress that when asked to determine effects in other markets (e.g., when asked how a change in the price of corn will affect ethanol markets and wheat markets), 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. Ask students to predict firm behavior in a game theory scenario and then ask students to revise the provided matrix to include a tax or subsidy that affects some of the payoffs. Ask students to predict the impact on firm behavior using data from the new matrix. Participate in a market simulation (wheat market, cocoa market, etc.) to demonstrate the interaction of buyers and sellers. Following the simulation, ask students to graph the data from the individual buyer and seller cards to derive supply and demand curves. Ask students to draw a graph representing a retail clothing firm earning short-run profits in monopolistic competition. Ask students to work in groups to answer a past free-response question that asks students to show the effect of a price floor or ceiling in a perfectly competitive market.	Summative assessment tasks include College Board AP style exam questions (including free response questions and multiple choice questions).

UNIT 5 FACTOR MARKETS	
BIG IDEA	**ESSENTIAL QUESTION**
BIG IDEA 3 Production Choices and Behavior	Why in the factor markets do firms hire additional resources up to the point at which the resource's marginal revenue product is equal to its marginal resource cost.
COURSE SKILLS FOR UNIT	
Principles and Models--Define economic principles and models.	1.A Describe economic concepts, principles, or models.
Interpretations--Explain given economic outcomes.	2.A Using economic concepts, principles, or models, explain how a specific economic outcome occurs or what action should be taken in order to achieve a specific economic outcome. 2.C Interpret a specific economic outcome using quantitative data or calculations.
Manipulation--Determine outcomes of specific economic situations.	3.B Determine the effect(s) of one or more changes on other economic markets.
ENDURING UNDERSTANDING	
Factor prices provide incentives and convey information to firms and factors of production.	
LEARNING OBJECTIVE	**ESSENTIAL KNOWLEDGE**

I CAN... Define (using graphs where appropriate) key terms and concepts relating to factor markets. Explain (using graphs where appropriate) the relationship between factors of production, firms, and factor prices. Calculate (using data from a graph or table where appropriate) the marginal revenue product and marginal resource cost. Explain (using graphs where appropriate) firms' and factors' responses to changes in incentives and constraints. Define (using graphs as appropriate) the characteristics of perfectly competitive factor markets. Explain (using graphs where appropriate) the profit-maximizing behavior of firms buying labor (with other inputs fixed) in perfectly competitive markets. Calculate (using data from a graph or table where appropriate) measures representing the profit-maximizing behavior of firms buying labor (with other inputs fixed) in perfectly competitive markets. Define (using graphs as appropriate) the characteristics of monopsonistic markets. Explain (using graphs where appropriate) the profit-maximizing behavior of firms buying labor (with other inputs fixed) in monopsonistic markets. Calculate (using data from a graph or table where appropriate) measures representing the profitmaximizing behavior of firms buying labor (with other inputs fixed) in monopsonistic markets.	Factors of production (labor, capital, and land) respond to factor prices (wages, interest, and rent), and employers' (firms') decision to hire is based on the productivity of the factors, output price, and cost of the factor. The quantity of labor demanded is negatively related to the wage rate, while the quantity of labor supplied is positively related to the wage rate in a given labor market, other things constant. Changes in the determinants of labor demand, such as the output price and the productivity of the worker, cause the labor demand curve to shift. Changes in the determinants of labor supply (such as immigration, education, working conditions, age distribution, availability of alternative options, preferences for leisure, and cultural expectations) cause the labor supply curve to shift. In a perfectly competitive labor market, the wage is set by the market and each firm hires the quantity of workers, where the marginal factor (resource) cost (wage) equals the marginal revenue product of labor. A typical firm may be a perfect competitor in the labor market even if it is an imperfect competitor in its output markets. A typical firm hires labor in a perfectly competitive labor market as long as the marginal revenue product of labor is greater than the market wage. To minimize costs or maximize profits, firms allocate inputs such that the last dollar spent on each input yields the same amount of marginal product. Marginal revenue product of a factor of production is the change in total revenue divided by the change in that factor of production, which is also equal to the marginal physical product of that factor multiplied by the marginal revenue (MRP = MP × MR). Firms in a perfectly competitive output market will have marginal revenue product of labor that is equal to the value of the marginal product of labor (VMPL = MPL × P) because marginal revenue for each unit of output is equal to price. In a monopsonistic labor market, a typical firm hires additional labor as long as the marginal revenue product is greater than the marginal factor (resource) cost (the wage of a new unit of labor plus the wage increase given to all existing labor). When a typical firm hires additional workers in a monopsonistic labor market, the marginal factor (resource) cost is greater than the supply price of labor.
FORMATIVE ASSESSMENT TASK	SUMMATIVE ASSESSMENT TASKS

The following tasks use debates, real-world examples, modeling, response groups, simulations, and think-pair-shares. Have students take part in a classroom auction that demonstrates the law of demand. Provide students with a series of market-failure scenarios and have them identify the type of market failure described in each. Work through example problems that ask students to identify who has an absolute advantage from given tables of data. Have students describe the similarities and differences between different market structures. After teaching students about positive and negative externalities and the resulting inefficiencies, provide students with a series of externality scenarios and ask them to provide appropriate policy solutions for each scenario. Provide students with complex scenarios involving multiple market imperfections; for example, a monopoly with a negative externality. Provide students with data on a sample firm's fixed and variable costs at varied levels of output as well as marginal revenues. Ask students to calculate profit-maximizing output for the firm. Provide students with a reading or video explaining a realworld economic problem. Ask students to analyze various policy choices using economic models and predict the outcome of each. Model in class how to explain the steps in a chain of events. Stress that when asked to determine effects in other markets (e.g., when asked how a change in the price of corn will affect ethanol markets and wheat markets), 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. Ask students to predict firm behavior in a game theory scenario and then ask students to revise the provided matrix to include a tax or subsidy that affects some of the payoffs. Ask students to predict the impact on firm behavior using data from the new matrix. Participate in a market simulation (wheat market, cocoa market, etc.) to demonstrate the interaction of buyers and sellers. Following the simulation, ask students to graph the data from the individual buyer and seller cards to derive supply and demand curves. Ask students to draw a graph representing a retail clothing firm earning short-run profits in monopolistic competition. Ask students to work in groups to answer a past free-response question that asks students to show the effect of a price floor or ceiling in a perfectly competitive market.	Summative assessment tasks include College Board AP style exam questions (including free response questions and multiple choice questions).

UNIT 6 MARKET FAILURE AND THE ROLE OF THE GOVERNMENT	
BIG IDEA	**ESSENTIAL QUESTION**
BIG IDEA 4 Market Inefficiency and Public Policy	Under what conditions may markets fail, and what is the effectiveness of government policies designed to correct market failures?
COURSE SKILLS FOR UNIT	
Principles and Models--Define economic principles and models.	1.A Describe economic concepts, principles, or models. 1.B Identify an economic concept, principle, or model illustrated by an example..
Interpretations--Explain given economic outcomes.	2.A Using economic concepts, principles, or models, explain how a specific economic outcome occurs or what action should be taken in order to achieve a specific economic outcome.
Graphing and Visuals--Model economic situations using graphs or visual representations.	4.B Demonstrate your understanding of a specific economic situation on an accurately labeled graph or visual. 4.C Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.
ENDURING UNDERSTANDING	
Perfectly competitive markets allocate resources efficiently, but imperfect competition often results in market inefficiencies. Private incentives can fail to account for all socially relevant considerations. In imperfect markets, well-designed government policy can reduce waste. Market outcomes can result in income inequality.	
LEARNING OBJECTIVE	**ESSENTIAL KNOWLEDGE**

I CAN... Define social efficiency. Explain (using graphs where appropriate) why resource allocation in perfectly competitive markets is socially efficient. Define externalities. Explain (using graphs where appropriate) how in the presence of externalities, private markets do not take into consideration social costs or social benefits. Define whether goods are rival and/or excludable. Explain how the nature of rival and/ or excludable goods influences the behavior of individuals and groups. Define government policy interventions in imperfect markets. Explain (using graphs where appropriate) how government policies can alter market outcomes in perfectly and imperfectly competitive markets. Calculate (using data from a graph or table as appropriate) changes in market outcomes resulting from government policies in perfectly competitive and imperfectly competitive markets. Define measures of economic inequality in income and wealth.	The optimal quantity of a good occurs where the marginal benefit of consuming the last unit equals the marginal cost of producing that last unit, thus maximizing total economic surplus. The market equilibrium quantity is equal to the socially optimal quantity only when all social benefits and costs are internalized by individuals in the market. Total economic surplus is maximized at that quantity. The socially optimal quantity of a good occurs where the marginal social benefit of consuming the last unit equals the marginal social cost of producing that last unit, thus maximizing total economic surplus. Externalities are either positive or negative and arise from lack of well-defined property rights and/or high transaction costs. In the presence of externalities, rational agents respond to private costs and benefits and not to external costs and benefits. Rational agents have the incentive to free ride when a good is non-excludable. Private goods are rival and excludable, and public goods are non-rival and non-excludable. Due to the free rider problem, private individuals usually lack the incentive to produce public goods, leaving government as the only producer. Governments sometimes choose to produce private goods, such as educational services, and to allow free access to them. Some natural resources are, by their nature, non-excludable and rival and therefore open access. Private individuals inefficiently overconsume such resources. Per-unit taxes and subsidies affect the total price consumers pay, net price firms receive, equilibrium quantity, consumer and producer surpluses, deadweight loss, and government revenue or cost. The impact of change depends on the price elasticity of demand and supply. Lump-sum taxes and lump-sum subsidies do not change either marginal cost or marginal benefit; only fixed costs will be affected. Binding price ceilings and floors affect prices and quantities differently depending on the market structures (perfect competition, monopoly, monopolistic competition, and monopsony) and the price elasticities of supply and demand. Income levels and poverty rates vary greatly both across and within groups (e.g., age, gender, race) and countries. The Lorenz curve and Gini coefficient are used to represent the degree of inequality in distributions and to compare distributions across different countries, policies, or time periods.
FORMATIVE ASSESSMENT TASK	SUMMATIVE ASSESSMENT TASKS

The following tasks use debates, real-world examples, modeling, response groups, simulations, and think-pair-shares. Have students take part in a classroom auction that demonstrates the law of demand. Provide students with a series of market-failure scenarios and have them identify the type of market failure described in each. Work through example problems that ask students to identify who has an absolute advantage from given tables of data. Have students describe the similarities and differences between different market structures. After teaching students about positive and negative externalities and the resulting inefficiencies, provide students with a series of externality scenarios and ask them to provide appropriate policy solutions for each scenario. Provide students with complex scenarios involving multiple market imperfections; for example, a monopoly with a negative externality. Provide students with data on a sample firm's fixed and variable costs at varied levels of output as well as marginal revenues. Ask students to calculate profit-maximizing output for the firm. Provide students with a reading or video explaining a realworld economic problem. Ask students to analyze various policy choices using economic models and predict the outcome of each. Model in class how to explain the steps in a chain of events. Stress that when asked to determine effects in other markets (e.g., when asked how a change in the price of corn will affect ethanol markets and wheat markets), 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. Ask students to predict firm behavior in a game theory scenario and then ask students to revise the provided matrix to include a tax or subsidy that affects some of the payoffs. Ask students to predict the impact on firm behavior using data from the new matrix. Participate in a market simulation (wheat market, cocoa market, etc.) to demonstrate the interaction of buyers and sellers. Following the simulation, ask students to graph the data from the individual buyer and seller cards to derive supply and demand curves. Ask students to draw a graph representing a retail clothing firm earning short-run profits in monopolistic competition. Ask students to work in groups to answer a past free-response question that asks students to show the effect of a price floor or ceiling in a perfectly competitive market.	Summative assessment tasks include College Board AP style exam questions (including free response questions and multiple choice questions).