

AP[®] Macroeconomics Correlation to the Course and Exam Description (effective Fall 2019)

Correlation to the Course Content

Topic	Learning Objectives and Essential Knowledge	Text Pages
UNIT 1: BASIC ECONOMIC CONCEPTS		
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.		
Topic 1.1: Scarcity	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.	pp. 3, 11–12
Topic 1.2: Opportunity Cost and the Production Possibilities Curve (PPC)	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.	pp. 11–14
	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	pp. 11–12
	MOD 1.B.3 The shape of the PPC depends on whether opportunity costs are constant, increasing, or decreasing.	pp. 10–14
	MOD-1.B.4 The PPC can shift because of changes in factors of production as well as changes in productivity/technology.	pp. 12–14
	MOD-1.B.5 Economic growth results in an outward shift of the PPC	pp. 13–15
MKT-1 Production and consumption increase by engaging in trade.		
Topic 1.3: Comparative Advantage and Gains from 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, business, or country can produce more of a good or service than any other producer with the same quantity of resources.	pp. 19–21
	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.	pp. 19–21
	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.	pp. 22–24
	MKT-1.B.2 Comparative advantage and opportunity costs determine the terms of trade for exchange under which mutually beneficial trade can occur.	pp. 22–24
	MKT-2 In a competitive market, demand for and supply of a good or service determine the equilibrium price.	
Topic 1.4: Demand	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.	p. 27
	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.	pp. 27–30

Topic	Learning Objectives and Essential Knowledge	Text Pages
Topic 1.5: Demand	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.	p. 33
	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.	pp. 33–35
Topic 1.6: Market Equilibrium, Disequilibrium, and Changes in Equilibrium	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.	pp. 40–42
	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.	pp. 41–42
	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.	pp. 42–43
UNIT 2 ECONOMIC INDICATORS AND THE BUSINESS CYCLE		
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.		
Topic 2.1: The Circular Flow and GDP	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.	p. 51
	MEA-1.A.2 GDP as a total flow of income and expenditure can be represented by the circular flow diagram.	pp. 52–53
	MEA-1.A.3 There are three ways of measuring GDP: the expenditures approach, the income approach, and the value-added approach.	pp. 55–57
Topic 2.2: Limitations of GDP	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.	pp. 56–63

Topic	Learning Objectives and Essential Knowledge	Text Pages
Topic 2.3: Unemployment	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.	p. 67
	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.	pp. 66–69
	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.	p. 70
	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.	pp. 67–68
	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.	pp. 69–70
	MEA-1.E.3 The deviation of the actual unemployment rate from the natural rate is cyclical unemployment.	pp. 69–70
	MEA-1.E.4 The natural rate of unemployment can gradually change over time because of such things as changes in labor force characteristics.	pp. 68–70
Topic 2.4: Price Indices and Inflation	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.	pp. 73–74
	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.	p. 74
	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.	pp. 74–75
	MEA-1.F.4 Real variables, such as real wages, are the nominal variables deflated by the price level.	p. 75
	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.	p. 76
Topic 2.5: Costs of Inflation	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.	pp. 79–81

Topic	Learning Objectives and Essential Knowledge	Text Pages
Topic 2.6: Real v. Nominal GDP	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.	pp. 85–86
	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.	pp. 85–87
	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.	pp. 86–88
	MEA-1.J.2 Nominal GDP can be converted to real GDP by using the GDP deflator.	pp. 86–87
MEA-2 The economy fluctuates between periods of expansion and contraction in the short run, but economic growth can occur in the long run.		
Topic 2.7: Business Cycles	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. pp. 91–92	
	MEA-2.A.1 Business cycles are fluctuations in aggregate output and employment because of changes in aggregate supply and/or aggregate demand.	pp. 91–92
	MEA-2.A.2 The phases of a business cycle are recession and expansion.	pp. 91–92
	MEA-2.A.3 The turning points of a business cycle are peak and trough.	p. 92
	MEA-2.A.4 The difference between actual output and potential output is the output gap.	p. 93
	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]	p. 93
UNIT 3 NATIONAL INCOME AND PRICE DETERMINATION		
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.		
Topic 3.1: Aggregate Demand (AD)	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).	p. 101
	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]	p. 102
	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.	p. 104
Topic 3.2: Multipliers	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.	pp. 110–111
	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.	pp. 110–111
	MOD-2.B.3 The tax multiplier quantifies the size of the change in aggregate demand as a result of a change in taxes.	pp. 111–112
	MOD-2.B.4 The expenditure multiplier and tax multiplier depend on the marginal propensity to consume.	pp. 110–112
	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.	p. 109

Topic	Learning Objectives and Essential Knowledge	Text Pages
Topic 3.3: Short-Run Aggregate Supply (SRAS)	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.	pp. 116–117
	MOD-2.C.2 The SRAS curve is upward-sloping because of sticky wages and prices. [See EK MOD-2.E.1]	p. 116
	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.	pp. 118–120
	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]	pp. 118–119
Topic 3.4: Long-Run Aggregate Supply (LRAS)	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.	pp. 123–126
	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]	p. 126
	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.	pp. 124–126
Topic 3.5: Equilibrium in the Aggregate Demand–Aggregate Supply (AD–AS) Model	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.	pp. 125–127
	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.	pp. 125–127
	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.	pp. 125–127
Topic 3.6: Changes in the AD–AS Model in the Short Run	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.	pp. 131–132
	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.	pp. 131–132
	MOD-2.H.3 Inflation can be caused by changes in aggregate demand (demand-pull) or aggregate supply (cost-push).	p. 139
Topic 3.7: Long-Run Self-Adjustment	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]	pp. 145–146
	MOD-2.I.2 Shifts in the long-run aggregate supply curve indicate changes in the full-employment level of output and economic growth.	p. 144–146

Topic	Learning Objectives and Essential Knowledge	Text Pages
POL-1 Fiscal and monetary policy have short-run effects on macroeconomic outcomes.		
Topic 3.8: Fiscal Policy	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.	pp. 150–151
	POL-1.A.2 The tools of fiscal policy are government spending and taxes/transfers.	pp. 151–152
	POL-1.A.3 Changes in government spending affect aggregate demand directly, and changes in taxes/transfers affect aggregate demand indirectly.	pp. 152–153
	POL-1.A.4 The government spending multiplier is greater than the tax multiplier.	pp. 152–153
	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.	p. 154
	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.]	pp. 150–155
	POL-1.A.7 The AD–AS model is used to demonstrate the short-run effects of fiscal policy.	p. 152
	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.	p. 152	
Topic 3.9: Automatic Stabilizers	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.	pp. 160–161
	POL-1.C.2 Tax revenues decrease automatically as GDP falls, preventing consumption and the economy from falling further.	p. 160–161
	POL-1.C.3 Tax revenues increase automatically as GDP rises, slowing consumption and preventing the economy from overheating.	pp. 160–161
	POL-1.C.4 Government policies, institutions, or agencies may also have social service programs whose transfer payments act as automatic stabilizers.	pp. 161–164
UNIT 4 FINANCIAL SECTOR		
MEA-3 Government policies, institutions, or agencies may also have social service programs whose transfer payments act as automatic stabilizers.		
Topic 4.1: Financial Assets	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.	p. 172
	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).	p. 171
	MEA-3.A.3 The price of previously issued bonds and interest rates on bonds are inversely related.	pp. 173–174
	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.	p. 175
Topic 4.2: Nominal v. Real Interest Rates	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.	pp. 180–181
	MEA-3.B.2 Lenders and borrowers establish nominal interest rates as the sum of their expected real interest rate and expected inflation.	p. 180
	MEA-3.B.3 A real interest rate can be calculated in hindsight by subtracting the actual inflation rate from the nominal interest rate.	p. 181

Topic	Learning Objectives and Essential Knowledge	Text Pages
Topic 4.3: Definition, Measurement, and Functions of Money	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.	pp. 184–185
	MEA-3.C.2 Money serves as a medium of exchange, unit of account, and store of value.	p. 185
	MEA-3.C.3 The money supply is measured using monetary aggregates designated as M1 and M2.	pp. 186–187
	MEA-3.C. The monetary base (often labeled as M0 or MB) includes currency in circulation and bank reserves.	p. 187
POL-2 The banking system plays an important role in the expansion of the money supply.		
Topic 4.4: Banking and 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.	pp. 193–194
	POL-2.A.2 Depository institutions operate using fractional reserve banking.	p. 195
	POL-2.A.3 Banks' reserves are divided into required reserves and excess reserves.	pp. 195–196
	POL-2.A.4 Excess reserves are the basis of expansion of the money supply by the banking system.	pp. 195–196
	POL-2.A.5 The money multiplier is the ratio of the money supply to the monetary base.	pp. 195–196
	POL-2.A.6 The size of expansion of the money supply depends on the money multiplier.	p. 196
	POL-2.A.7 The maximum value of the money multiplier can be calculated as the reciprocal of the required reserve ratio.	p. 196
	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.	pp. 195
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.		
Topic 4.5: The Money Market	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.	p. 201
	MKT-3.A.2 Given a monetary base determined by a country's central bank, money supply is independent of the nominal interest rate.	pp. 202–203
	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.	pp. 202–203
	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.	pp. 202–203
	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.	pp. 202–203

Topic	Learning Objectives and Essential Knowledge	Text Pages
POL-1 Fiscal and monetary policy have short-run effects on macroeconomic outcomes.		
Topic 4.6: Monetary Policy	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.	pp. 206–209
	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	pp. 207–209
	POL-1.D.3 When the central bank conducts an open-market purchase (sale), reserves increase (decrease), thereby increasing (decreasing) the monetary base.	pp. 207–208
	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.	p. 208
	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.)	p. 208
	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 in flows.]	pp. 207–208
	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.	pp. 211–212
	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.]	pp. 210–211
	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.	pp. 210–211
	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.		p. 212

Topic	Learning Objectives and Essential Knowledge	Text Pages
MKT-4 The interaction of borrowers, who demand loanable funds, and savers, who supply loanable funds, determines the equilibrium real interest rate.		
Topic 4.7: The Loanable Funds Market	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.	p. 216
	MKT-4.A.2 The demand for loanable funds shows the inverse relationship between real interest rates and the quantity demanded of loanable funds.	p. 216
	MKT-4.A.3 The supply of loanable funds shows the positive relationship between real interest rates and the quantity supplied of loanable funds.	pp. 216–217
	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.	pp. 217–218
	MKT-4.B.2 For an open economy, investment equals national savings plus net capital inflow.	pp. 217–218
	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.	pp. 218–219
	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.	p. 217
	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.	pp. 216–220
	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.	pp. 218–220
UNIT 5 LONG-RUN CONSEQUENCES OF STABILIZATION POLICIES		
POL-1 Fiscal and monetary policy have short-run effects on macroeconomic outcomes.		
Topic 5.1: Fiscal and Monetary Policy Actions in the Short Run	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.	pp. 229–232
	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.]	pp. 229–232

Topic	Learning Objectives and Essential Knowledge	Text Pages
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.		
Topic 5.2: The Phillips Curve	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).	pp. 235–236
	MOD-3.A.2 An economy is always operating somewhere along the SRPC.	pp. 238–239
	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.	pp. 238–239
	MOD-3.A.4 Long-run equilibrium corresponds to the intersection of the SRPC and the LRPC.	pp. 238–239
	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.	pp. 237–239
	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.	pp. 239–240
	MOD-3.B.2 Supply shocks correspond to shifts of the SRPC.	pp. 239–240
	MOD-3.B.3 that cause the natural rate of unemployment to change will cause the LRPC to shift.	pp. 240–241
POL-3 There are long-run implications of monetary and fiscal policy.		
Topic 5.3: Money Growth and Inflation	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.	pp. 244–246
	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.	pp. 244–246
	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.	pp. 246–247
Topic 5.4: Government Deficits and the National Debt	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.	p. 251
	POL-3.B.2 A government adds to the national debt when it runs a budget deficit.	p. 254
	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.]	p. 251
Topic 5.5: 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.	pp. 251–253, 260
	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.	p. 261
	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.	pp. 260–261
	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.	pp. 261–262

Topic	Learning Objectives and Essential Knowledge	Text Pages
MEA-2 The economy fluctuates between periods of expansion and contraction in the short run, but economic growth can occur in the long run.		
Topic 5.6: Economic Growth	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.	pp. 265–266
	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.	pp. 268–269
	MEA-2.B.3 Output per employed worker is a measure of average labor productivity.	pp. 268–269
	MEA-2.B.4 Productivity is determined by the level of technology and physical and human capital per worker.	p. 268
	MEA-2.B.5 The aggregate production function shows that output per capita is positively related to both physical and human capital per capita.	p. 268–269
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.		
Topic 5.6: Economic Growth	MOD-1.B Explain (using graphs as appropriate) how the PPC is related to the long-run aggregate supply (LRAS) curve.	
	MOD-1.B.1 An outward shift in the PPC is analogous to a rightward shift of the long-run aggregate supply curve. [See LO MOD-2.1]	p. 269
POL-4 Authorities and organizations institute policies that affect economic growth.		
Topic 5.7: Public Policy and Economic Growth	POL-4.A a. Explain (using graphs as appropriate) public policies aimed at increasing long-run economic growth. b. Define supply-side fiscal policies.	
	POL-4.A.1 Public policies that impact productivity and labor force participation affect real GDP per capita and economic growth.	p. 274
	POL-4.A.2 Government policies that invest in infrastructure and technology affect growth.	p. 266
	POL-4.A.3 Supply-side fiscal policies affect aggregate demand, aggregate supply, and potential output in the short run and long run by increasing incentives that affect household and business economic behavior.	pp. 276–278
UNIT 6 OPEN ECONOMY— INTERNATIONAL TRADE AND FINANCE		
MEA-4 Foreign trade accounting measures the flow of goods, services, and financial capital between countries.		
Topic 6.1: Balance of Payments Accounts	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.	pp. 287–288
	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.	pp. 287–288
	MEA-4.A.3 The capital and financial account (CFA) records financial capital transfers and purchases and sales of assets between countries.	pp. 287–288
	MEA-4.A.4 The CFA is not always balanced; it may show a surplus (financial capital in flow) or a deficit (financial capital outflow).	pp. 287–288
	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.	pp. 285–289
	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 ($CA+CFA=0$).	pp. 288–289
	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.	

Topic	Learning Objectives and Essential Knowledge	Text Pages
Topic 6.2: Exchange Rates	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.	pp. 301–303
	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.	p. 304
Topic 6.3: The Foreign Exchange Market	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.	p. 304
	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.	pp. 307–309
	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.	pp. 307–308
	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.	pp. 302–304
Topic 6.4: Effect of Changes in Policies and Economic Conditions on the Foreign Exchange Market	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	pp. 307–308
	MKT-5.E.2 Fiscal policy can influence aggregate demand, real output, the price level, and exchange rates.	pp. 307–308
	MKT-5.E.3 Monetary policy can influence aggregate demand, real output, the price level, and interest rates, and thereby affect exchange rates.	pp. 308–310
Topic 6.5: Changes in the Foreign Exchange Market and Net Exports	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.	pp. 316–317
	MKT-5.F. 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.]	pp. 315–318
Topic 6.6: Real Interest Rates and International Capital Flows	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.]	pp. 321–324
	MKT-5.G.2 Central banks can influence the domestic interest rate in the short run, which in turn will affect net capital in flows.	p. 324