The following outline shows the topics we will cover; changes may be made throughout the semester.

This outline is a valuable tool. You should follow how the lectures correspond to the course outline. The outline is also an excellent study guide. You should be able to look at the outline and ask yourself questions about each entry. If you can easily formulate answers to such questions you will be well prepared for the exams. If you have trouble asking a question or formulating an answer, you need to review the topic further. Don’t forget about the outline when you prepare for the course exams.

The lecture notes are organized according to this outline.

I. The Concerns of Macroeconomics

A. Micro vs. Macro: Looking at the Whole Picture

1. Macro issues
   
   a) Fluctuations in aggregate output: the business cycle
   b) Unemployment: birth of macro in the Great Depression
   c) Economic Growth
   d) Inflation and deflation

2. Distinction between micro and macro issues

   a) Study of individual markets in micro analysis vs. full national economic system
   b) Focus on aggregate levels of production vs. composition of production
   c) Correlation across markets

      (1) Gives substance to the concept of "aggregate fluctuations"
      (2) Price fluctuations are also linked across markets
B. Macroeconomics and Public Policy: An Overview

1. Positive vs. Normative economics: describe reality vs. prescribe actions to improve economic performance
2. Tradition of normative analysis in macro
3. The current macroeconomic outlook
4. Linkage of macroeconomics to government policy

   a) Fiscal policy: government spending and taxation
   b) Monetary policy

II. Macroeconomic Data

A. Measuring Aggregate Output

1. Reasons to measure aggregate output

2. Diversity of products as a challenge to the definition of aggregate output

3. Gross Domestic Product (GDP): The money value of final goods and services produced in a country over a given period of time

   a) Logic of using money values as weights for aggregation
   b) Final vs. intermediate goods and services
   c) GDP, final sales and inventory changes
   d) Investment: Intermediate or final good?

      (1) Definition of investment
      (2) Should investment goods be counted as final output?
      (3) Gross vs. net domestic product: the difficulty of measuring depreciation

   e) Exchange of existing assets
   f) Market vs. non-market production
   g) Components of GDP

      (1) GDP equation: C + I + G + X - IM
      (2) Government spending on goods and services as one use for output
      (3) Valuation of government services at cost
      (4) Role of transfer payments
      (5) Correcting components for imports to arrive at domestic production
4. GDP and income*

   a) Why GDP must equal income
   b) Technical issues: depreciation, indirect business tax, and international income flows.

5. GDP as a measure of social welfare

   a) Desire to measure whether an economy is "better off"
   b) The assumption that "more is better"

      (1) Critique: Possibility of misleading assumptions in economics about what brings human happiness
      (2) Example: The 1960s as an economic “Golden Age” although there was substantial social unrest

6. Limitations of GDP as a measure of welfare

   a) GDP and income distribution

      (1) Does money value reflect true social value when distribution is unequal?
      (2) Importance of values to evaluate economic changes

   b) Valuation of leisure
   c) Environmental degradation
   d) Bads versus goods

      (1) Examples: pollution control, war production, police protection

B. Employment and Unemployment

*Important Note: this topic will not be covered in lecture. You need to learn this material outside of class based on the lecture notes.*

1. The large human cost of unemployment
2. Unemployment as a waste of resources
3. The unemployment rate

   a) Survey method of measurement
   b) Changes in the unemployment rate due to changes in unemployment versus changes in the labor force
   c) Under employed and discouraged workers: under-estimates of unemployment
   d) Incidence of unemployment over a year versus measured rate at a point in time
4. Cyclical, structural, and frictional unemployment
5. Unemployment rate as a "lagging indicator" of the business cycle
6. Recent statistics on the unemployment rate.
7. Definition of "full employment"

   a) Possible inflation problems if the unemployment rate falls below the full employment level

C. Measuring Prices and Inflation

   *Important Note: this topic will not be covered in lecture. You need to learn this material outside of class based on the lecture notes.

1. Defining inflation and its costs

   a) Movements in all prices vs. movements in relative prices: macro vs. micro perspective
   b) Misconceptions about the costs of inflation: a "neutral" inflation

      (1) Real vs. nominal quantities
      (2) Psychological impact of inflation

   c) Economic costs of inflation: why do we care?

      (1) Effects on individuals with fixed nominal incomes
      (2) Impact on wealth of borrowers and lenders

          (a) Gains and losses on financial contracts
          (b) Inflation expectations and interest rates
          (c) Real vs. nominal interest rates

      (3) Examples

          (a) Home mortgages in the 1970s
          (b) Inflation and government debt
          (c) Were interest rates higher under Carter or Reagan?

      (4) Inflation and the tax system
      (5) Costs of uncertainty due to difficulty in contracting

          (a) Extreme chaos of hyperinflations
2. Alternative measures of inflation

   a) Price index: the change in the price of a fixed market basket of goods

      (1) Definition
      (2) The consumer price index (CPI)

         (a) Components of the CPI

      (3) The producer price index (PPI)

         (a) Leading indicator of consumer price inflation?

      (4) Criticisms of measuring inflation with price indexes

   b) The GDP price index: broader coverage

D. Historical Fluctuations of Output, Employment, and Inflation

1. GDP statistics

   a) Magnitude of GDP
   b) Annual and quarterly figures
   c) Annualized growth rates

2. Corrections for inflation

   a) Reason to adjust for inflation
   b) Real GDP

3. Long-term inflation and real growth rates

4. Definition of peaks, troughs, recessions, and growth recessions

   a) Appropriate benchmark: zero growth or long-term trend growth
   b) Stagnation and “jobless” recoveries

5. Fluctuations in GDP, inflation, and unemployment: A brief look at the history of the business cycle

   a) Volatility in the 19th and early 20th centuries
   b) The economic catastrophe of the Great Depression
   c) The World War 2 economy
   d) Impressive performance of the 1950s and 1960s: a benchmark for output, unemployment, and inflation
   e) Disappointments of the 1970s
   f) Recession and growth in the 1980s
g) The 1990-91 recession
h) The 1990s boom: A “New Economy”?
i) The bursting “tech bubble” and the recession of 2001; “jobless recovery,” low interest rates
j) The “Great Recession” and financial crisis
k) Perspectives on the “Great Moderation” and future prospects*

III. Introduction to Macro Theory: The Supply Side and the Demand Side

A. Objectives of Macro Theory

1. Provide explanations for the key macro variables (positive theory)
2. Policy advice (normative theory): how should government activity in the economy be designed to promote national welfare?
3. Causation vs. correlation
4. Need for “abstraction:” focus on the most important issues
5. Controversy exists, various theories have conflicting predictions
6. The role of empirical evidence and problems of interpretation in a non-experimental science

B. Two Theoretical Perspectives: Supply Side and Demand Side

1. Supply side: What can be produced? What is the economy’s “potential?”
2. Demand side: Can output be sold?
3. Both supply side and demand side necessary for actual production and employment
4. Central questions in macro debates
   a) When does one side or the other determine the actual level of activity?
   b) How do supply and demand forces interact to affect macro outcomes?
   c) These questions central to policy recommendations
   d) Brief examples of supply-side and demand-side policy

C. Factors that Determine Potential Output

1. Definition of potential output (Y*)
2. Resources and potential output
   a) Natural resources linked to "endowments" and regulation
   b) Labor: population, preferences, incentives
   c) Human capital: education and skills
d) Capital and investment

(1) Saving

(a) Role of saving and resources available for capital accumulation
(b) Preferences for thrift
(c) Incentives: interest rate, income taxes, special tax preferences for saving

(2) Capital investment incentives

3. Technology and potential output

a) Scientific and engineering knowledge
b) Tax incentives: R&D credits, capital gains taxes on returns from "venture capital" investment

4. Summary: supply side driven by preferences, technology, and resources

a) Potential output as the supply-side benchmark and target for policy

5. Supply-side explanations for output growth and fluctuations

C. The Demand Side

1. Demand as the motivation for production
2. Demand-induced recessions

a) Effect of a negative aggregate "demand shock"
b) Low demand as an explanation for recessions, unemployment, and under-utilized capital
c) The Depression, Keynes, and demand fluctuations as the source of business cycles

3. Social consequences of insufficient demand to reach potential output

D. Demand and Supply over Short and Long Time Horizons

1. View of conventional macroeconomic theory
2. New classical” equilibrium models
3. Fundamental Keynesian models
IV. Major Components of the Economy

A. Consumption: Source of Demand – Determinant of Saving

1. Consumption and income
   a) Psychological "law:" consumption spending rises with income
   b) Marginal propensity to consume (MPC)
      (1) Definition
      (2) Why the MPC is between zero and one
   c) Evidence of fluctuations in consumption and income over the business cycle

2. The consumption function
   a) A mathematical model
      (1) Movements along the consumption function with changes in disposable income
      (2) Relation between slope of the consumption function and the MPC
   b) Shifts of the consumption function
      (1) Wealth changes: distinction between wealth and income
      (2) Interest Rates
      (3) Expectations of future income: consumer confidence
      (4) Application: temporary vs. permanent tax changes and consumption

3. Consumption and saving
   a) Saving and individual wealth accumulation
   b) Saving as source of funds for capital investment
   c) Relevance of saving for the supply side and potential output
   d) Conflict between supply-side and demand-side perspectives on saving

4. Consumption statistics
   a) Consumer spending constitutes largest portion of sales
   b) Trends in shares of consumption in total output
B. Investment: Volatile Component of Demand – Source of Capital Accumulation

1. Volatility of procyclical investment
2. Business confidence, sales, and capacity utilization
3. Productivity of capital and technical change
4. Cost of capital
   a) Interest rates: borrowing and opportunity cost of internal finance
   b) Saving, interest rates, and investment
   c) Tax rates

5. The availability of finance: cash flow and credit crunches create volatility
6. Residential investment
   a) Interest sensitivity
   b) Important role of home construction in historical recoveries
   c) Access to mortgage finance
   d) Recent Minsky cycle in housing

C. International Transactions and Aggregate Demand

1. Magnitude of international trade
2. Determinants of imports and exports
   a) Preferences of domestic and foreign consumers
   b) Technology
   c) Domestic and foreign incomes
   d) Relative prices

3. What are exchange rates? Depreciation and appreciation of currencies
4. Purchasing power parity
   a) Definition: the “law” of one price and international arbitrage
   b) Movements of exchange rates to restore purchasing power parity
   c) Effect of different inflation rates across countries on exchange rates

5. Relative strength of economies and exchange rates

6. Interest rates and exchange rates
   a) Relative interest rates across countries and the foreign demand for domestic assets
   b) Effect on exchange rates
   c) Example: Strong dollar in the mid 1980s

7. Exchange rates, confidence, and speculation
8. Link between exchange rates, imports, exports, and aggregate demand
   a) Channel for the effect of monetary policy

9. Trade deficits
   a) Trade deficits and international debt*
      (1) Production versus absorption of goods and services
      (2) The economic “burden” of international debt
   b) Problem with debt denominated in foreign currency rather than domestic currency
   c) Trade deficits and foreign saving*
      (1) Current boost to capital accumulation
      (2) Future drain on domestic resources
   d) Trade deficits and exchange rates: self correction?*

10. Is a strong dollar good or bad?

D. The Government Sector

1. Size and trends of government spending
   a) Spending on goods and services: the contribution to GDP
   b) Transfer payments
   c) Federal government versus state and local spending

2. Composition of spending
3. Trends and composition of taxes
4. Federal deficits

V. Deeper Exploration of Demand-Side Theory: Keynesian Economics

A. Equilibrium of Output and Aggregate Demand

1. The Keynesian Cross (income-expenditure diagram)
   a) Firms produce what they expect to sell
      (1) The 45 degree line as the aggregate supply curve
   b) The aggregate demand curve: positive slope and the MPC
c) Determination of macroeconomic equilibrium

(1) Sales expectations decrease if output above equilibrium -> lower production
(2) Sales expectations increase if output below equilibrium -> higher production
(3) Equilibrium where demand expectations are realized

d) Shifts of aggregate demand and changes in equilibrium output

(1) Changes in the consumption function
(2) Changes of investment
(3) Economic fluctuations due to changes in aggregate expenditure

e) Endogenous versus exogenous variables in economic models

2. Equilibrium output and potential output

a) Definition of potential output
b) Potential output as a limit to expansion induced by higher expenditure
c) No necessary reason for aggregate expenditure to be sufficient to purchase potential output: a fundamental macroeconomic problem

3. The Multiplier

a) Graphical demonstration of the multiplier effect
b) Intuition behind the multiplier
c) Algebraic analysis of the multiplier phenomenon
d) The investment accelerator

(1) An equation capturing investment volatility
(2) Effect on the multiplier

B. Fiscal Policy in the Keynesian Framework

1. Government spending stabilizers for demand-induced fluctuations

a) Spending increases to offset recession
b) The multiplier and "pump-priming"
c) Historical examples
2. Tax policy: consumption and taxes
   a) Including taxes in the basic Keynesian algebraic model
   b) Comparison of tax cuts and spending increases
   c) Income distribution, taxes, and consumption
   d) Anticipation of future taxes

3. Can government deficits be good?
   a) Conventional views on dangers of government deficits as a burden on future generations
   b) The Keynesian critique: deficits to stimulate a weak economy

4. Restraining a demand-led boom with fiscal policy: inflation concerns

5. Choice of spending policy versus tax policy to reach fiscal goals
   a) Conservative criticism of Keynesian fiscal policy as leading to big government
   b) A “conservative Keynesian policy:” use tax cuts and spending cuts

6. Practical challenges of managing fiscal policy
   a) Time lags and forecasting problems
   b) Uncertain size of the multiplier
   c) Uncertainty about the level of potential output
   d) Concerns that stimulative policy may be inflationary

VI. Inflation and Unemployment: The "Phillips Curve"

A. Historical Link Between Inflation and Unemployment
   1. U.S. data provide many examples of procyclical inflation
   2. Exceptions: 1970s stagflation and, to some extent, 1990s boom
   3. Explanation of procyclical inflation
      a) Labor Market
      b) Product Market

B. Phillips Curve Graph
   1. Inverse relation between inflation and unemployment
      a) Slope of Phillips Curve
      b) Possibility of deflation
      c) Steeper Phillips Curve at very low unemployment
d) Flatter Phillips Curve at very high unemployment

2. Shifts of the Phillips Curve

   a) Unfavorable supply shocks and stagflation
   b) Historical examples
   c) Favorable supply shocks: lower costs and technological improvement

C. Inflation Expectations

   1. Role of real wages in labor market bargaining
   2. Inflation expectations and wage bargains*
   3. Shift of the Phillips Curve due to changes of inflation expectations
   4. Persistent effects of supply shocks on inflation

       a) Show how expectations reinforce supply shock effect on inflation
       b) Examples

   5. Pattern of inflation during recession and recovery

       a) Effect of recession on unemployment, inflation, and inflation expectations
       b) Persistent reduction of inflation due to recession

   6. Policy lesson: high cost of reducing inflation expectations

VII. Monetary Economics and Policy

A. The Meaning and Measurement of Money

   1. Definition of money

       a) Meaning of "generalized purchasing power"
       b) How money serves this role

   2. Roles of money

       a) Unit of account
       b) Store of value
       c) Medium of exchange

           (1) Money as one side of all purchases and sales
           (2) Barter and the "double coincidence of wants" problem
           (3) How money overcomes this problem

   3. Forms of money
a) Commodity money
b) Convertible fiat money

(1) The gold standard

c) True fiat money with no intrinsic value

(1) Faith in acceptability of money as generalized purchasing power, an implicit social contract
(2) Legal tender laws

4. Concept of liquidity*

a) Ease of transfer of asset into generalized purchasing power
b) Certainty of asset's value in money terms

5. Monetary aggregates*

B. Banking and Money Creation

1. Fractional reserve banking

a) Origins of banking as "safe keeping" for gold and currency
b) Reason that banks can lend part of their reserves
c) Definition of fractional reserve banking

2. Money creation*

a) Deposit of currency increases bank reserves
b) Banks use excess reserves to make loans
c) Loans create more money in circulation
d) If currency is withdrawn from banks, process works in reverse leading to money destruction

C. Monetary Policy

1. The Federal Open Market Committee (FOMC)

2. Bank reserves and the federal funds interest rate*1

a) Open-market purchase
b) Open-market sales
c) Open-market operations are the key day-to-day instrument used by the Fed to control the federal funds rate*
3. Money markets and interest rates
   a) Banks' incentive to lower interest rates when they have excess reserves
   b) Banks' incentive to increase interest rates when reserves are in short supply

4. Monetary policy and real Output: The Transmission Mechanism
   a) Effect of money supply changes on aggregate demand
   b) Monetary policy for macro stabilization
      (1) Expansionary monetary policy to offset effects of negative demand shocks
      (2) Potential output as the target for monetary policy
      (3) Flexibility of monetary policy relative to fiscal policy
      (4) Dangers of inflation from excessive monetary expansion
      (5) Pre-emptive strikes against inflation

5. Long-run monetary policy objectives
   a) “New consensus” macroeconomics
   b) The Taylor rule
   c) Inflation targeting

6. Limitations of monetary policy**
   a) Problem if spending inelastic to interest rates
   b) The “zero bound” for interest rates
      (1) Why nominal interest rates do not go negative
      (2) Historical examples
   c) Quantitative easing

VIII. Economic Growth and Supply-Side Policy*

A. Short-Run and Long-Run Macroeconomics
   1. Demand-side orientation of Keynesian macroeconomics*
   2. If policy is effective at targeting potential output the real impact of demand factors is temporary
   3. Key long-run issue: potential output when all resources fully utilized.
      a) The "supply-side rules" in the long run
      b) Modern perspective: well-structured monetary policy facilitates convergence of output to the potential level
B. Long-Run Growth of Output

1. The exceptional performance of capitalism in long historical perspective
2. Key role of productivity growth
   a) Population growth and importance of per capita GDP
   b) Effect on long-run living standards of small changes in productivity growth rates
3. Sources of growth in labor productivity and per capita output
   a) Capital accumulation: physical and human
   b) Technical change
4. Historical trends and fluctuations in labor productivity
5. Critique: do demand-side factors have larger long-run effects than usually assumed?

C. Policy and Potential Output

1. Government can stimulate potential output by improving incentives
2. Cut tax rates to improve incentives
   a) Lower income taxes to stimulate labor supply
   b) Lower taxes on interest income to stimulate saving and release resources for investment in new capital
   c) Lower capital gains taxes to encourage investment
3. Reduce regulatory burden
4. Assessing effectiveness of supply-side policies
   a) Review of 1980s policies
   b) Best evidence for supply-side view is the long expansion from 1983 to mid 1991.
   c) But detailed look at this expansion indicates that it may have been led by consumption and aggregate demand rather than aggregate supply
   d) Partial reversal of tax cuts during the 1990s expansion
5. Supply-side policies and the distribution of tax burdens across income classes
   a) Criticism of tax cuts for the rich and “trickle down” economics
   b) Supply-side view that tax cuts for the wealthy have indirect benefits for others
6. Recent perspectives on supply-side policy
IX. Saving and Government Deficits

A. Composition of Aggregate Demand and Saving

1. If output is at the potential level, a key issue is composition of aggregate demand. How much goes to investment to build capital for future uses?
2. Saving as a source of funds for investment
3. Loanable funds market graph
   a) Derive upward sloping saving supply and downward sloping investment demand curves
   b) Explain convergence to market equilibrium through interest rate adjustment

B. Effects of Changes in Saving

1. Show impact of shifts in saving supply on interest rates, saving, and capital investment
2. Explain long-run effects on the capital stock and potential output of saving changes
   a) Link analysis to current concerns about the demands on social security in the future when the "baby boom" generation retires
3. Long run vs. short run: aggregate demand concerns and conflicting policy objectives
   a) Higher S => higher I => higher capital in long run if economy remains at potential output
   b) But higher S => lower AD => lower actual output and employment in the short run unless policy or some other mechanism offsets lower AD to restore potential output

   (1) Lower short-run output could reduce investment, not increase it

   c) Dilemma for policy

C. Government Budget Deficits

1. Modes of government finance
a). Taxes, money creation, borrowing
b) Distinction between the government debt and the government budget deficit
c) A brief history of U.S. budget deficits

2. Shift of demand for funds in the capital market due to government borrowing
   a) Effect on interest rates
   b) Identify magnitude of investment crowding out

3. Long-run impact of investment crowding out on capital and potential output
4. Crowding out as a burden on future generations
5. Policy dilemma: temporary deficits help economy reach potential output, but long-run deficits damage potential output and growth
6. Assessment of recent fiscal policy
   a) Clinton surpluses
   b) The G.W. Bush tax cuts and return to deficits
   c) Deficits in the Great Recession
   d) Entitlements for the baby boom and beyond