

ECON 101 - Principles of Macroeconomics

Course Cover Sheet

Subject/Prefix ECON

Course Number 101

Course Title Principles of Macroeconomics

Term Fall

Year 2013

Originator Corrales, UPDATE - Lydia

Revision Type

- Preparation
- Revise content and update text (minor revision)

Identify and Explain the Changes Checked Above:

Updated textbooks and CID language.

Proposed New Preparation (Prerequisite): MATH 050 or MATH 050D or MATH 053 or appropriate assessment

Do the changes being made to this course affect a currently offered degree or Certificate?

No

Explain:

Do the proposed hours for this class fall out of the standard unit-hour ratio (1 unit lecture = 18 Hours, 1 unit lab - 54 hours)?

No

Explain:

Course Description

This is an introductory course in which students learn to describe and analyze the performance and policies of national economic systems, with an emphasis on the US economy. It is intended for Economics or Business majors as well as to satisfy General Education requirements. Topics include production possibilities and tradeoffs; comparative economic systems; functions of government; national income and employment; business cycles; money and banking; monetary and fiscal policy; comparative advantage and trade policy; economic growth and stability; and income distribution and poverty.

Max Enrollment 45

Rationale

This course is a fundamental requirement for any student planning to pursue a degree in Economics, Business, Finance or related fields. It also important for students who want to be informed about economy policy and the national and global environment.

Codes

TOP Code

2204.00 - Economics, General

SAM Code Non-Occupational

Course Classification Code Y - Credit Course

Transfer Apps UC/CSU

Non-degree applicable to Transferable

Non Degree Applicable (#0-39) No

Degree Applicable (#40 - 99) No

Transferable and Degree Applicable (#100 & up) Yes

Basic Skills No

Apprenticeship No

Co-contributor

Contributor

Methods of Instruction

Instruction Type

- Audio-Visual

- Discussion (classroom)
- Lecture

Other Method

1. Working through problems with student participation.
2. Simulations of various economic processes.
3. In class individual and group exercises applying concepts presented.

Entry Skills**Entry Skills**

1. **Write a multi-paragraph essay with a thesis statement and general introductory and concluding remarks. (ENGL 035 or ENLA 100)**
2. **Interpret linear data in the form of words, algebraic equations, data tables, or graphs and translate that same information in one of the alternate forms. (MATH 053)**
3. **Solve linear equations and inequalities and their applications. (MATH 053)**
4. **Comprehend textbook reading written at the early-college level. (READ 043)**

Assignments**Assignment**

1. **Assignment Text**
Read assigned textbook chapters
2. **Assignment Text**
Homework in which students identify, discuss and apply course concepts.
3. **Assignment Text**
In-class group exercises applying concepts to analysis and policy formation.
4. **Assignment Text**
Written essays evaluating macroeconomic situations and discussing policy issues.

Methods of Evaluation**Evaluation Method**

- Measure understanding of course material through objective exams and quizzes containing multiple choice, true-false and/or short answer questions.

Other Methods

1. Assess the ability to apply course concepts through review questions included in class exercises.
2. Measure overall achievement of course objectives in tests using objective, short answer and essay questions.
3. Critique essays based on standards of analysis presented in class.

Textbooks/Instructional Material**Textbooks**

Title	Publisher	Author	ISBN	Year	Rationale if date is over 5 years old

Title	Publisher	Author	ISBN	Year	Rationale if date is over 5 years old
Macroeconomics 3rd Edition	Worth Publishers	Paul Krugman/ Robin Wells		2012	
Macroeconomics 9th edition	McGraw-Hill	David C. Colander		2013	

Manuals

Title	Publisher	Author
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Software

Title	Edition/Version	Publisher/Manufacturer	Description
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Other

Other Instructional Material
Supplemental readings (articles, policy papers), videos and websites

Course Attributes

Variable No

Minimum Units

Units 3.000

Total Contact Hours 54.000

Lecture 54.000

Lab

Outside-of-Class Hours 108.000

Outside-of-Class Hours (Calculated) 108

Repeatability and Re-enrollment

Repeatable for Credit No

Minimum Required for a "C"

Student must complete all tests and assignments with a minimum average score of 70%

May be taken 1

Grading

- Standard Letter
- Standard Letter

Course Objectives / Exit Skills

Objective

1. Describe the structure and the economic flows in a mixed economy and review issues of unemployment and inflation: measurement, social and economic costs, types and causes.
2. Use the aggregate supply and demand model and the Keynesian spending model to analyze the causes of fluctuation in output, inflation, and unemployment.
3. Describe the fiscal system of government in the US, including the use of fiscal policy to achieve various economic goals.

4. **Compare the primary macroeconomic views.**
5. **Describe the money and banking in the US economy, the tools of monetary policy, and its effects on money and investment markets and the macroeconomic equilibrium.**
6. **Portray the income distribution in the US and review the issues of inequality and mobility.**
7. **Describe the economic flows in the international economy, and discuss the major controversies regarding globalization.**

General Education

Academic Level and General Education Information

Course fulfills a major course requirement at the four-year level Yes

If so, which major & list CSU or UC campuses

Business, Economics / CSULA, CSU Fullerton, UCLA, UC Irvine

Course is intended to fulfill a major course requirement at the four year level No

If so, which major & list CSU or UC campuses

Course fulfills a requirement for an approved certificate of achievement or associate degree Yes

Which approved certificate/degree Business Administration

Course will be a requirement for a certificate of achievement or associate degree currently under development No

Which proposed certificate/degree under development

Course is designed to be a general education course at:

Community College Level Yes

General Education

- **RHC General Education** RHC General Education
 - Category 6: Social and Behavioral Sciences (RSOC)

Is this course designed to fulfill a local graduation requirement at Rio Hondo College?

Competence in reading No

Competence in written expression No

Competence in mathematics No

Physical Education activity No

Course is designed to be a general education course at:

The 4-year college level Yes

General Education

- **IGETC Area 4: Social and Behavioral Sciences** IGETC Area 4: Social and Behavioral Sciences
 - Social and Behavioral Sciences
- **CSU GE Area D: Social, Political, and Economic Institutions and Behavior, Historical** CSU GE Area D: Social, Political, and Economic Institutions and Behavior, Historical
 - Social Sciences

Requisites

Requisites

1. **Advisory**

Subject ENGL - English

Requisite Course ENGL 035 - Introduction to College Composition (Active)

Explanation of "Other"

Condition or

2. **Advisory**

Subject ENLA - English as a New Language

Requisite Course ENLA 100 - Advanced Composition (Active)

Explanation of "Other"

or appropriate placement

Condition

3. **Advisory**

Subject READ - Reading and Study Skills

Requisite Course READ 043 - Reading College Textbooks (Active)

Explanation of "Other"

or appropriate placement

Condition

4. **Prerequisite**

Subject MATH - Mathematics

Requisite Course MATH 050 - Elementary Algebra (Historical)

Explanation of "Other"

Condition or

5. **Prerequisite**

Subject

Requisite Course MATH 050D - Elementary Algebra D (Historical)

Explanation of "Other"

Condition or

6. **Prerequisite**

Subject

Requisite Course MATH 053 - B-STEM Elementary Algebra (Active)

Explanation of "Other"

or appropriate placement

Condition

Library Resources

Originator's Recommendations

Check only one of the two check boxes below

NO. No additional Library resources are needed, and/or I will notify Library staff if and when appropriate items are identified, and/or the department will provide supporting materials at the site where the course will be offered.

No

YES. The originator recommends the following items be added to the library collection. (Please prioritize requests and give ISBN, author, title, publisher, date of publication, and price if known.)

Yes

Recommended Items

Animal Spirits: How Human Psychology Drives the Economy, and Why It Matters for Global Capitalism by George A. Akerlof and Robert J. Shiller
The Ascent of Money: A Financial History of the World by Niall Ferguson

Course Content

Lecture Content

I. The Core Issues of Macroeconomics

A. Introduction

1. The basic tasks of an economy
2. Macroeconomic goals
3. Productive and allocative efficiency

4. Factors of production
5. Production possibilities
- B. The U.S. Economy
 1. Mixed economy: markets, households and the public sector
 2. Structure: current and historical trends.
 3. Challenges of the 21st century
 4. Relationship to the global economy
- C. Supply and Demand in a Market
 1. Determinants of Demand
 2. Determinants of Supply
 3. Equilibrium and the price mechanism
 - a. Impact of shifts in supply and demand on price and output.
 - b. Taxes, price controls, costs, affect market outcomes.
- II. Measuring Macro Outcomes
 - A. National-Income Accounts
 1. Circular flow and the measurement of economic activity
 2. Measuring production: GDP
 3. Limitations of per capita GDP as a measure of economic performance
 4. National income and disposable income.
 - B. Unemployment
 1. Measurements: Unemployment; labor force participation and employment data.
 2. Interpreting unemployment measures:
 - a. Underemployment and discouraged workers.
 - b. Payroll and household surveys
 3. Types of unemployment: Causes and characteristics
 4. Social and economic costs of unemployment
 5. Incidence of unemployment by gender, race, age, education
 - C. Inflation
 1. Measuring inflation with price indices: CPI, GDP deflator, PPI
 2. Nominal vs. Real income, prices and interest rates.
 3. Redistribution effects
 4. Macroeconomic effects of inflation
 - a. Speculation
 - b. Uncertainty
 5. Money illusion and bracket creep
 6. Causes of inflation: Demand pull and cost push
- III. Cyclical Instability
 - A. The Great Depression and the nature of the Business Cycle
 1. Causes of the great depression
 2. Classical view: Say's law and laissez faire
 3. Keynesian view:
 - a. sticky prices, and unstable demand.
 - b. Stabilization policy
 4. Stages of the business cycle
 5. Recession and Growth recession
 - B. The Aggregate Supply and Demand model
 1. Price level affect on Aggregate demand
 - a. Cash balances, interest, and foreign trade
 2. Price level affects on Aggregate supply
 - a. profit incentive and cost of production
 - b. Aggregate Supply in the short and long run
 - C. The Keynesian model
- IV. Fiscal Policy
 - A. Fiscal Policy tools.
 - B. Goals of fiscal policy
 - C. Inflation/unemployment tradeoff
 - D. Lags and crowding out issues.
 - E. Surpluses, Deficits, and Debts
- V. Monetary Policy Options
 - A. Characteristics of Money
 - B. Money Supply: definitions and trends.
 - C. Creation of money.
 - D. The Federal Reserve System
 - E. Monetary policy tools
 - F. Monetary Policy
 1. Investment demand
 2. Money market.
 3. Impact on money supply on AD
 - G. Monetarist view

- VI. Poverty and Inequality
 - A. Distribution of Income: Widening gap
 - B. Causes of poverty and mobility
 - C. Policies addressing and impacting poverty
- VII. Supply-Side view
 - A. Shifts in Aggregate supply.
 - B. Short term changes in Aggregate Supply
 - C. Long term Supply-Side effects
 - 1. Investment and human capital
 - 2. Growth theories
- VIII. Global Issues
 - A. Impact of open economy on fiscal policy
 - B. Global stabilizer effect
 - C. Limitations to monetary economy.
 - D. Theory of comparative advantage
 - E. Arguments for protection from free trade.

Lab Content

Codes/Dates

Entry of Special Dates

Academics Services
Requested Start Semester

Actual Start
Semester Spring

UC Approval
Semester

CSU Approval
Semester

IGETC Approval
Semester

CSU GE Approval
Semester

IS Comment

Max Enrollment 45

C-ID Number

History

CB Codes
Catalog Year

Course Origination Date

CB00 State ID

College Level

CB03 TOP Code 2204.00 - Economics, General

CB04 Course Credit Status

CB05 Course Transfer Status

CB08 Basic Skill Status (PBS Status)

CB09 SAM Code Non-Occupational

CB10 COOP Work EXP-ED

CB11 California Classification Y - Credit Course

CB13 Special Class Status

CB21 Course Prior to College

CB23 Funding Agency Category

CB24 Program Course Status

CB25 - Course General Education Status

CB26 - Course Support Course Status

Delivery Methods

Explain Other:

ASSIST

Queue for Assist No

Last Request From Queue

Last Direct Request 01/17/2018

ASSIST Preview

Prefix ECON

Course Number 101

Lecture Hours 54.000

Lab Hours

Content

I. The Core Issues of Macroeconomics

A. Introduction

1. The basic tasks of an economy
2. Macroeconomic goals
3. Productive and allocative efficiency
4. Factors of production
5. Production possibilities

B. The U.S. Economy

1. Mixed economy: markets, households and the public sector
2. Structure: current and historical trends.
3. Challenges of the 21st century
4. Relationship to the global economy

C. Supply and Demand in a Market

1. Determinants of Demand
2. Determinants of Supply
3. Equilibrium and the price mechanism
 - a. Impact of shifts in supply and demand on price and output.
 - b. Taxes, price controls, costs, affect market outcomes.

II. Measuring Macro Outcomes

A. National-Income Accounts

1. Circular flow and the measurement of economic activity
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3. Limitations of per capita GDP as a measure of economic performance
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B. Unemployment

1. Measurements: Unemployment; labor force participation and employment data.
2. Interpreting unemployment measures:
 - a. Underemployment and discouraged workers.
 - b. Payroll and household surveys
3. Types of unemployment: Causes and characteristics
4. Social and economic costs of unemployment
5. Incidence of unemployment by gender, race, age, education

C. Inflation

1. Measuring inflation with price indices: CPI, GDP deflator, PPI
2. Nominal vs. Real income, prices and interest rates.
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A. The Great Depression and the nature of the Business Cycle

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Lab Content

Course Description

This is an introductory course in which students learn to describe and analyze the performance and policies of national economic systems, with an emphasis on the US economy. It is intended for Economics or Business majors as well as to satisfy General Education requirements. Topics include production possibilities and tradeoffs; comparative economic systems; functions of government; national income and employment; business cycles; money and banking; monetary and fiscal policy; comparative advantage and trade policy; economic growth and stability; and income distribution and poverty.

Prerequisites

Prerequisite

MATH 050 or

MATH 050D or

MATH 053 or appropriate placement

Corequisites

Advisories

Advisory

ENGL 035 or

ENLA 100 or appropriate placement

READ 043 or appropriate placement

Objectives

- Describe the structure and the economic flows in a mixed economy and review issues of unemployment and inflation: measurement, social and economic costs, types and causes.
- Use the aggregate supply and demand model and the Keynesian spending model to analyze the causes of fluctuation in output, inflation, and unemployment.

- Describe the fiscal system of government in the US, including the use of fiscal policy to achieve various economic goals.
- Compare the primary macroeconomic views.
- Describe the money and banking in the US economy, the tools of monetary policy, and its effects on money and investment markets and the macroeconomic equilibrium.
- Portray the income distribution in the US and review the issues of inequality and mobility.
- Describe the economic flows in the international economy, and discuss the major controversies regarding globalization.

Instruction Methods

- Lecture
- Discussion (classroom)
- Audio-Visual
- 1. Working through problems with student participation.
 2. Simulations of various economic processes.
 3. In class individual and group exercises applying concepts presented.

Evaluation Methods

- Measure understanding of course material through objective exams and quizzes containing multiple choice, true-false and/or short answer questions.

Other Methods:

1. Assess the ability to apply course concepts through review questions included in class exercises.
2. Measure overall achievement of course objectives in tests using objective, short answer and essay questions.
3. Critique essays based on standards of analysis presented in class.

Other Texts

- Supplemental readings (articles, policy papers), videos and websites

Assignments**Unclassified Assignments:**

- Read assigned textbook chapters
- Homework in which students identify, discuss and apply course concepts.
- In-class group exercises applying concepts to analysis and policy formation.
- Written essays evaluating macroeconomic situations and discussing policy issues.

Attached Files

Attached File

Cross Listed Courses

Related

CHEM 130 - General Chemistry I

Course Cover Sheet

Subject/Prefix CHEM

Course Number 130

Course Title General Chemistry I

Term Fall

Year 2017

Originator Burdett, UPDATE - Kathy

Course Description

CHEM 130 is the first semester of a two semester sequence designed for students intending to major in science and engineering. The lecture course covers classical/modern chemistry, with applications, in stoichiometry and classical atomic theory of chemistry, periodic properties, gas laws, modern quantum theory of atomic and molecular structure and periodic properties, thermochemistry, liquids and solids, and solution chemistry. The laboratory introduces experimental chemistry with examples from all areas of chemistry.

Max Enrollment

Rationale

This course is a requirement for several majors, including chemistry, biology, and most branches of engineering. It is also required for admission to several health-related graduate programs, including medical, dental, pharmacy, and veterinary schools. Additionally, this course satisfies the natural science with lab requirement for RHC GE and the physical science with lab requirement for CSU GE and IGETC.

Codes

TOP Code

1905.00 - Chemistry, General

SAM Code Non-Occupational

Course Classification Code Y - Credit Course

Transfer Apps UC/CSU

Non-degree applicable to Transferable

Non Degree Applicable (#0-39) No

Degree Applicable (#40 - 99) No

Transferable and Degree Applicable (#100 & up) Yes

Basic Skills No

Apprenticeship No

Co-contributor

Contributor

Methods of Instruction

Instruction Type

- Audio-Visual
- Discussion (classroom)
- Lecture and Laboratory (one class)

Other Method

Entry Skills

Entry Skills

1. Carry out elementary- and intermediate-level chemical calculations
2. Express experimental and calculated results with correct units and with the correct number of significant figures

3. Utilize IUPAC nomenclature and common names in the identification of simple inorganic compounds.
4. Apply their understanding of the submicroscopic domain of matter in explaining macroscopic observations
5. Develop a solid foundation of laboratory techniques essential for success in the chemistry laboratory.
6. Develop safe working-habits in the laboratory environment
7. Solve applications involving triangles using the Pythagorean Theorem, the Law Sines, and the Law of Cosines.
8. Calculate the six trigonometric functions using both the circular and triangular definitions.
9. Comprehend textbook reading written at the early-college level. (READ 043)
10. Incorporate research material into student writing with some errors but with enough fluency and accuracy to demonstrate college-level proficiency. (ENGL 101)
11. Write with some grammatical and organizational errors, but demonstrate college-level proficiency in organization, grammar, and mechanics. (ENGL 101)

Assignments

Assignment

1. **Assignment Text**
Read assigned textbook chapters
2. **Assignment Text**
Assigned problems from textbook
3. **Assignment Text**
Additional worksheets and practice problems
4. **Assignment Text**
Laboratory reports

Methods of Evaluation

Evaluation Method

- Measure understanding of course material through objective exams and quizzes containing multiple choice, true-false and/or short answer questions.
- Measure understanding of laboratory work for accuracy through written write ups and/or discussion.
- Appraise laboratory work for evidence of accuracy, organization, and assignment relevancy.

Other Methods

Textbooks/Instructional Material

Textbooks

Title	Publisher	Author	ISBN	Year	Rationale if date is over 5 years old
Chemistry, 8th Ed		Zumdahl/Zumdahl		2011	

Manuals

Title	Publisher	Author
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Title	Publisher	Author
Custom-published laboratory manual		

Software

Title	Edition/Version	Publisher/Manufacturer	Description
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Other

Other Instructional Material
Laboratory goggles
Scientific calculator

Course Attributes

Variable No

Minimum Units

Units 5.000

Total Contact Hours 162.000

Lecture 54.000

Lab 108.000

Outside-of-Class Hours 108.000

Outside-of-Class Hours (Calculated) 108

Do the proposed hours for this class fall out of the standard unit-hour ratio (1 unit lecture = 18 Hours, 1 unit lab - 54 hours)?

No

Explain:

Repeatability and Re-enrollment

Repeatable for Credit No

Minimum Required for a "C"

To earn a grade of "C", students must complete assignments and examinations, earning at least a weighted average of 70% of all points assigned.

May be taken 1

Grading

- Standard Letter
- Standard Letter

Course Objectives / Exit Skills

Objective

1. Carry out stoichiometric calculations involving pure substances, solutions, and gases, expressing their answers with the correct units and correct number of significant figures
2. Determine the amount of heat evolved or consumed in a chemical reaction under standard conditions
3. Identify the geometries of a diverse range of molecules according to the tenets of VSEPR theory
4. Describe the electronic structure of an atom according to modern quantum theory
5. Identify intermolecular forces present in a given pure substance or mixture

6. **Determine (quantitatively and qualitatively) the effect of an impurity on the physical properties of a solvent**
7. **Demonstrate a solid foundation of laboratory techniques, especially acid-base titration, calorimetry, gravity and vacuum filtration, and visible spectroscopy**
8. **Demonstrate safe working-habits in the laboratory environment**

General Education

Academic Level and General Education Information

Course fulfills a major course requirement at the four-year level Yes

If so, which major & list CSU or UC campuses

Agricultural Science, Animal Health Science, Biology, Chemistry, Civil Engineering at Cal Poly Pomona; Biochemistry, Geological Science, Math, Physics at CSU Fullerton; Biology, Chemistry, Computer Engineering, Kinesiology at CSU Long Beach; Developmental and Cell Biology, Neurobiology at UCI; Anthropology, Ecology at UCLA

Course is intended to fulfill a major course requirement at the four year level No

If so, which major & list CSU or UC campuses

Course fulfills a requirement for an approved certificate of achievement or associate degree Yes

Which approved certificate/degree AA General Studies: Emphasis in Science and Mathematics; AS Biology; AS Environmental Science; AS-T Biology;

AS-T Chemistry, AS Engineering: AA-T Kinesiology, COA's IGETC & CSU GE

Course will be a requirement for a certificate of achievement or associate degree currently under development No

Which proposed certificate/degree under development

Course is designed to be a general education course at:

Community College Level Yes

General Education

- **RHC General Education** RHC General Education
 - Category 5: Natural Science Lecture (RSCI)
 - Category 5: Natural Science Lab (RLAB)

Is this course designed to fulfill a local graduation requirement at Rio Hondo College?

Competence in reading No

Competence in written expression No

Competence in mathematics No

Physical Education activity No

Course is designed to be a general education course at:

The 4-year college level Yes

General Education

- **IGETC Area 5: Physical and Biological Sciences (mark all that apply)** IGETC Area 5: Physical and Biological Sciences (mark all that apply)
 - A: Physical Science
 - C: Physical or Biological Science LABORATORY
- **CSU GE Area B: Scientific Inquiry and Quantitative Reasoning (mark all that apply)** CSU GE Area B: Scientific Inquiry and Quantitative Reasoning (mark all that apply)
 - B1 - Physical Science
 - B3 - Laboratory Sciences

Requisites

Requisites

1. **Advisory**

Subject ENGL - English

Requisite Course ENGL 101 - College Composition and Research (Active)

Explanation of "Other"
Condition

2. **Advisory**

Subject READ - Reading and Study Skills

Requisite Course READ 043 - Reading College Textbooks (Active)

Explanation of "Other"

or appropriate placement

Condition

3. **Advisory**

Subject MATH - Mathematics

Requisite Course MATH 175 - Plane Trigonometry (Active)

Explanation of "Other"

or appropriate placement

Condition

4. **Prerequisite**

Subject CHEM - Chemistry

Requisite Course CHEM 120 - Introduction to Chemistry (Active)

Explanation of "Other"

Condition

Library Resources

Originator's Recommendations

Check only one of the two check boxes below

NO. No additional Library resources are needed, and/or I will notify Library staff if and when appropriate items are identified, and/or the department will provide supporting materials at the site where the course will be offered.

Yes

YES. The originator recommends the following items be added to the library collection. (Please prioritize requests and give ISBN, author, title, publisher, date of publication, and price if known.)

No

Recommended Items

Course Content

Lecture Content

A. Chemical Foundations

1. Units of Measurement
2. Significant Figures and Calculations
3. Dimensional Analysis
4. Density

B. Atoms, molecules, and Ions

1. Dalton's Atomic theory
2. Early Experiments to Characterize the Atom
3. The Modern View of Atomic Structure
4. Molecules and Ions
5. Naming Compounds

C. Stoichiometry

1. The mole
2. Percent Composition of Compounds
3. Determining the Formula of a Compound
4. Chemical Equations
5. Balancing Chemical Equations
6. Stoichiometric Calculations
7. Calculations Involving a Limiting Reagent

- D. Types of Reactions and Solution Stoichiometry
 - 1. Strong and Weak electrolytes
 - 2. Dilution
 - 3. Types of Chemical Reactions
 - 4. Precipitation Reactions
 - 5. Acid-Base Reactions
 - 6. Oxidation-Reduction Reactions
 - 7. Balancing Oxidation-Reduction Equations
 - 8. Stoichiometry of Reactions
 - 9. Oxidation-Reduction Reactions
 - 10. Balancing Oxidation-Reduction Reactions
 - 11. Stoichiometry of Oxidation-Reduction Reactions
- E. Gases
 - 1. The Gas Laws of Boyle, Charles, and Avogadro
 - 2. The Ideal Gas Law
 - 3. Gas Stoichiometry
 - 4. Dalton's Law of Partial Pressures
 - 5. The Kinetic Molecular Theory
 - 6. Real Gases
- F. Thermochemistry
 - 1. The First Law of Thermodynamics
 - 2. Enthalpy and Calorimetry
 - 3. Hess's Law
 - 4. Standard Enthalpies of Formation
 - 5. Bond Energy
- G. Atomic Structure and Periodicity
 - 1. Electromagnetic Radiation
 - 2. Bohr Model
 - 3. The Wave Mechanical Model of the Atom
 - 4. Quantum Numbers
 - 5. Orbital Shapes and Energies
 - 6. Electron Spin and the Pauli Principle
 - 7. Periodic Trends in Atomic Properties
 - 8. The Properties of a Group
- H. Bonding
 - 1. Types of Chemical Bonds
 - 2. Electronegativity
 - 3. Bond Polarity and Dipole Moments
 - 4. Covalent Bond Energies and Chemical Reactions
 - 5. Lewis Structures
 - 6. The VSEPR Model
- I. Covalent Bonding: Orbitals
 - 1. Hybridization and the Localized Electron Model
 - 2. The Molecular Orbital Model
 - 3. Bonding in Diatomic Molecules
- J. Liquids and Solids
 - 1. Intermolecular Forces
 - 2. Structures and Types of Solids
 - 3. Structures and Bondings in Metals
 - 4. Molecular and Ionic Solids
 - 5. Vapor Pressure
 - 6. Phase Diagrams
- K. Properties of Solutions
 - 1. Solution Composition
 - 2. Factors Affecting Solubility
 - 3. The Vapor Pressures of Solutions
 - 4. Boiling-Point Elevation
 - 5. Freezing-Point Depression
 - 6. Osmotic Pressure
 - 7. Colligative Properties of Electrolyte and Nonelectrolyte Solutions
- L. Experimental Chemistry
 - 1. Laboratory Safety and Standard Techniques
 - 2. Densities of Solids and Liquids
 - 3. Determination of a Chemical Formula
 - 4. Identification of a Carbonate or Bicarbonate Salt
 - 5. Analysis of an Unknown Chloride
 - 6. Properties of the Alkaline Earths and the Halogens
 - 7. Preparation of Cuprous Chloride
 - 8. Analysis of a Zinc-Aluminum Alloy

9. Determination of the Ideal Gas Constant
10. Calorimetry and Specific Heat of a Metal
11. Atomic Spectrum of the Hydrogen Atom
12. Standardization of a Basic Solution
13. Modeling of Molecules
14. Determination of Iron by Reaction with Permanganate
15. Qualitative Analysis of Anions in the Sulfate Group
16. Modeling of Inorganic Compounds

Lab Content

Codes/Dates

Entry of Special Dates

Academics Services

Requested Start Semester

Actual Start

Semester Fall

UC Approval

Semester

CSU Approval

Semester

IGETC Approval

Semester

CSU GE Approval

Semester

IS Comment

Max Enrollment

C-ID Number

History

CB Codes

Catalog Year

Course Origination Date

CB00 State ID

College Level

CB03 TOP Code 1905.00 - Chemistry, General

CB04 Course Credit Status

CB05 Course Transfer Status

CB08 Basic Skill Status (PBS Status)

CB09 SAM Code Non-Occupational

CB10 COOP Work EXP-ED

CB11 California Classification Y - Credit Course

CB13 Special Class Status

CB21 Course Prior to College

CB23 Funding Agency Category

CB24 Program Course Status

CB25 - Course General Education Status

CB26 - Course Support Course Status

Delivery Methods

Explain Other:

ASSIST

Queue for Assist No

Last Request From Queue

Last Direct Request 10/17/2017

ASSIST Preview

Prefix CHEM

Course Number 130

Lecture Hours 54.000

Lab Hours

Content

- A. Chemical Foundations
 - 1. Units of Measurement
 - 2. Significant Figures and Calculations
 - 3. Dimensional Analysis
 - 4. Density
- B. Atoms, molecules, and Ions
 - 1. Dalton's Atomic theory
 - 2. Early Experiments to Characterize the Atom
 - 3. The Modern View of Atomic Structure
 - 4. Molecules and Ions
 - 5. Naming Compounds
- C. Stoichiometry
 - 1. The mole
 - 2. Percent Composition of Compounds
 - 3. Determining the Formula of a Compound
 - 4. Chemical Equations
 - 5. Balancing Chemical Equations
 - 6. Stoichiometric Calculations
 - 7. Calculations Involving a Limiting Reagent
- D. Types of Reactions and Solution Stoichiometry
 - 1. Strong and Weak electrolytes
 - 2. Dilution
 - 3. Types of Chemical Reactions
 - 4. Precipitation Reactions
 - 5. Acid-Base Reactions
 - 6. Oxidation-Reduction Reactions
 - 7. Balancing Oxidation-Reduction Equations
 - 8. Stoichiometry of Reactions
 - 9. Oxidation-Reduction Reactions
 - 10. Balancing Oxidation-Reduction Reactions
 - 11. Stoichiometry of Oxidation-Reduction Reactions
- E. Gases
 - 1. The Gas Laws of Boyle, Charles, and Avogadro
 - 2. The Ideal Gas Law
 - 3. Gas Stoichiometry
 - 4. Dalton's Law of Partial Pressures
 - 5. The Kinetic Molecular Theory
 - 6. Real Gases
- F. Thermochemistry
 - 1. The First Law of Thermodynamics
 - 2. Enthalpy and Calorimetry
 - 3. Hess's Law
 - 4. Standard Enthalpies of Formation
 - 5. Bond Energy
- G. Atomic Structure and Periodicity
 - 1. Electromagnetic Radiation
 - 2. Bohr Model
 - 3. The Wave Mechanical Model of the Atom
 - 4. Quantum Numbers
 - 5. Orbital Shapes and Energies
 - 6. Electron Spin and the Pauli Principle
 - 7. Periodic Trends in Atomic Properties
 - 8. The Properties of a Group
- H. Bonding

1. Types of Chemical Bonds
 2. Electronegativity
 3. Bond Polarity and Dipole Moments
 4. Covalent Bond Energies and Chemical Reactions
 5. Lewis Structures
 6. The VSEPR Model
- I. Covalent Bonding: Orbitals
1. Hybridization and the Localized Electron Model
 2. The Molecular Orbital Model
 3. Bonding in Diatomic Molecules
- J. Liquids and Solids
1. Intermolecular Forces
 2. Structures and Types of Solids
 3. Structures and Bondings in Metals
 4. Molecular and Ionic Solids
 5. Vapor Pressure
 6. Phase Diagrams
- K. Properties of Solutions
1. Solution Composition
 2. Factors Affecting Solubility
 3. The Vapor Pressures of Solutions
 4. Boiling-Point Elevation
 5. Freezing-Point Depression
 6. Osmotic Pressure
 7. Colligative Properties of Electrolyte and Nonelectrolyte Solutions
- L. Experimental Chemistry
1. Laboratory Safety and Standard Techniques
 2. Densities of Solids and Liquids
 3. Determination of a Chemical Formula
 4. Identification of a Carbonate or Bicarbonate Salt
 5. Analysis of an Unknown Chloride
 6. Properties of the Alkaline Earths and the Halogens
 7. Preparation of Cuprous Chloride
 8. Analysis of a Zinc-Aluminum Alloy
 9. Determination of the Ideal Gas Constant
 10. Calorimetry and Specific Heat of a Metal
 11. Atomic Spectrum of the Hydrogen Atom
 12. Standardization of a Basic Solution
 13. Modeling of Molecules
 14. Determination of Iron by Reaction with Permanganate
 15. Qualitative Analysis of Anions in the Sulfate Group
 16. Modeling of Inorganic Compounds

Lab Content

Course Description

CHEM 130 is the first semester of a two semester sequence designed for students intending to major in science and engineering. The lecture course covers classical/modern chemistry, with applications, in stoichiometry and classical atomic theory of chemistry, periodic properties, gas laws, modern quantum theory of atomic and molecular structure and periodic properties, thermochemistry, liquids and solids, and solution chemistry. The laboratory introduces experimental chemistry with examples from all areas of chemistry.

Prerequisites

Prerequisite
CHEM 120

Corequisites

Advisories

Advisory
ENGL 101
READ 043 or appropriate placement
MATH 175 or appropriate placement

Objectives

- Carry out stoichiometric calculations involving pure substances, solutions, and gases, expressing their answers with the correct units and correct number of significant figures
- Determine the amount of heat evolved or consumed in a chemical reaction under standard conditions
- Identify the geometries of a diverse range of molecules according to the tenets of VSEPR theory
- Describe the electronic structure of an atom according to modern quantum theory
- Identify intermolecular forces present in a given pure substance or mixture
- Determine (quantitatively and qualitatively) the effect of an impurity on the physical properties of a solvent

- Demonstrate a solid foundation of laboratory techniques, especially acid-base titration, calorimetry, gravity and vacuum filtration, and visible spectroscopy
- Demonstrate safe working-habits in the laboratory environment

Instruction Methods

- Lecture and Laboratory (one class)
- Discussion (classroom)
- Audio-Visual

Evaluation Methods

- Measure understanding of course material through objective exams and quizzes containing multiple choice, true-false and/or short answer questions.
- Measure understanding of laboratory work for accuracy through written write ups and/or discussion.
- Appraise laboratory work for evidence of accuracy, organization, and assignment relevancy.

Other Texts

- Laboratory goggles
- Scientific calculator

Assignments**Unclassified Assignments:**

- Read assigned textbook chapters
- Assigned problems from textbook
- Additional worksheets and practice problems
- Laboratory reports

Attached Files

Attached File

Cross Listed Courses

Related

CS 152 - Discrete Structures

Course Cover Sheet

Subject/Prefix CS

Course Number 152

Course Title Discrete Structures

Term Fall

Year 2018

Originator Rios, Rodolfo

Course Description

This course is an introduction to the discrete structures used in Computer Science with an emphasis on their applications. Topics covered include: Functions, Relations and Sets; Basic Logic; Proof Techniques; Basics of Counting; Graphs and Trees; and Discrete Probability.

Max Enrollment 35

Rationale

In an effort to provide students a clear pathway into a Computer Science program, an Associate Degree for Transfer will be offered. The Academic Senates for California Community Colleges and California State University decided to develop a faculty-led, state-wide, concerted effort to identify the course content for an associate degree for transfer which will award students an associate degree and prepare them for special benefits/guarantees upon transfer to a CSU/UC. This course is part of the CSU/UC Transfer Model Curriculum (C-ID: COMP-152) and is one of the courses in a sequence of courses that is compliant with the standards of the Association for Computing Machinery (ACM).

Codes

TOP Code

0706.00 - Computer Science

SAM Code Non-Occupational

Course Classification Code Y - Credit Course

Transfer Apps CSU

Non-degree applicable to Transferable

Non Degree Applicable (#0-39) No

Degree Applicable (#40 - 99) No

Transferable and Degree Applicable (#100 & up) Yes

Basic Skills No

Apprenticeship No

Co-contributor

Contributor

Methods of Instruction

Instruction Type

- Activity (individual)
- Classwork
- Discussion (classroom)
- Learning Modules
- Project
- Reading Assignments

Other Method

Entry Skills

Entry Skills

1. **Design, implement, test, and debug a program that uses each of the following fundamental programming constructs: basic computation, simple I/O, standard conditional and iterative structures, and the definition of functions (CIT-127)**
2. **Use pseudocode or a programming language to implement, test, and debug algorithms for solving simple problems. (CIT-127)**
3. **Demonstrate different forms of binding, visibility, scoping, and lifetime management. (CIT-127)**

Assignments

Assignment

1. **Read assigned course material.**

Assignment Text

Read assigned chapters/modules from the textbook.

2. **Individual Projects**

Assignment Text

Complete assigned projects from textbook or created by instructor.

3. **Practice Quizzes**

Assignment Text

Complete practice quizzes as assigned.

4. **Practice Exams**

Assignment Text

Complete practice exams as assigned.

5. **Individual Oral Presentation**

Assignment Text

Deliver presentations on assigned topics to measure understanding of subject matter.

Methods of Evaluation

Evaluation Method

- Measure understanding of course material through objective exams and quizzes containing multiple choice, true-false and/or short answer questions.
- Assess individual projects for evidence of individual work, organization, clarity and accuracy.
- Evaluate individual presentations for evidence of individual work, organization, clarity and accuracy.
- Measure understanding of homework for accuracy and relevancy through quizzes, exams and/or short writing assignments.

Other Methods

Textbooks/Instructional Material

Textbooks

Title	Publisher	Author	ISBN	Year	Rationale if date is over 5 years old
Discrete Mathematics	Pearson	Richard Johnsonbaugh	9780321964687	2018	

Manuals

Title	Publisher	Author
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Software

Title	Edition/Version	Publisher/Manufacturer	Description
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Other

Other Instructional Material

Course Attributes

Variable No

Minimum Units
Units 3.000

Total Contact Hours 54.000

Lecture 54.000

Lab 0.000

Outside-of-Class Hours 108.000

Outside-of-Class Hours (Calculated) 108

Do the proposed hours for this class fall out of the standard unit-hour ratio (1 unit lecture = 18 Hours, 1 unit lab - 54 hours)?

Explain:

Repeatability and Re-enrollment
Repeatable for Credit No

Minimum Required for a "C"

Completion of required work with a weighted average of at least 70%
May be taken

Grading

- Standard Letter
- Standard Letter

Course Objectives / Exit Skills

Objective

1. Describe how formal tools of symbolic logic are used to model real-life situations, including those arising in computing contexts such as program correctness, database queries, and algorithms.
2. Relate the ideas of mathematical induction to recursion and recursively defined structures.
3. Analyze a problem to create relevant recurrence equations.
4. Demonstrate different traversal methods for trees and graphs.
5. Apply the binomial theorem to independent events and Bayes' theorem to dependent events

General Education

Academic Level and General Education Information
 Course fulfills a major course requirement at the four-year level No
 If so, which major & list CSU or UC campuses

Course is intended to fulfill a major course requirement at the four year level Yes

If so, which major & list CSU or UC campuses

BS Computer Science - California State Polytechnic University

BS Computer Science - California State Fullerton

BS Computer Science - California State Los Angeles

BS Computer Science - University of California Los Angeles

BS Computer Science - University of California Irvine

Course fulfills a requirement for an approved certificate of achievement or associate degree No

Which approved certificate/degree

Course will be a requirement for a certificate of achievement or associate degree currently under development Yes

Which proposed certificate/degree under development Associate Degree for Transfer in Computer Science

Course is designed to be a general education course at:

Community College Level No

Is this course designed to fulfill a local graduation requirement at Rio Hondo College?

Competence in reading No

Competence in written expression No

Competence in mathematics No

Physical Education activity No

Course is designed to be a general education course at:

The 4-year college level No

Requisites

Requisites

1. Prerequisite

Subject CIT - Computer Information Technology

Requisite Course CIT 127 - Python Programming I (Active)

Explanation of "Other"

Condition

Library Resources

Originator's Recommendations

Check only one of the two check boxes below

NO. No additional Library resources are needed, and/or I will notify Library staff if and when appropriate items are identified, and/or the department will provide supporting materials at the site where the course will be offered.

Yes

YES. The originator recommends the following items be added to the library collection. (Please prioritize requests and give ISBN, author, title, publisher, date of publication, and price if known.)

No

Recommended Items

Course Content

Lecture Content

I. Functions, Relations and Sets

Functions (surjections, injections, inverses, composition)

Relations (reflexivity, symmetry, transitivity, equivalence relations)

Sets (Venn diagrams, complements, Cartesian products, power sets)

Pigeonhole principles

Cardinality and countability

II. Basic Logic

Propositional logic

Logical connectives

Truth tables

Normal forms (conjunctive and disjunctive)
 Validity
 Predicate logic
 Universal and existential quantification
 Modus ponens and modus tollens
 Limitations of predicate logic

III. Proof Techniques

Notions of implication, converse, inverse, contrapositive, negation, and contradiction
 The structure of mathematical proofs
 Direct proofs
 Proof by counterexample
 Proof by contradiction
 Mathematical induction
 Strong induction
 Recursive mathematical definitions
 Well orderings

IV. Basics of Counting

Counting arguments
 Sum and product rule
 Inclusion-exclusion principle
 Arithmetic and geometric progressions
 Fibonacci numbers
 The pigeonhole principle
 Permutations and combinations
 Basic definitions
 Pascal's identity
 The binomial theorem
 Solving recurrence relations
 Common examples
 The Master theorem

V. Graphs and Trees

Trees
 Undirected graphs
 Directed graphs
 Spanning trees/forests

VI. Discrete Probability

Finite probability space, probability measure, events
 Conditional probability, independence, Bayes' theorem
 Integer random variables, expectation
 Law of large numbers

Lab Content

Codes/Dates

Entry of Special Dates

Academics Services

Requested Start Semester Fall

Actual Start

Semester Fall

UC Approval

Semester

CSU Approval

Semester

IGETC Approval

Semester

CSU GE Approval

Semester

IS Comment

Max Enrollment 35**C-ID Number****History**

CB Codes

Catalog Year**Course Origination Date****CB00 State ID****College Level****CB03 TOP Code** 0706.00 - Computer Science**CB04 Course Credit Status****CB05 Course Transfer Status****CB08 Basic Skill Status (PBS Status)****CB09 SAM Code** Non-Occupational**CB10 COOP Work EXP-ED****CB11 California Classification** Y - Credit Course**CB13 Special Class Status****CB21 Course Prior to College****CB23 Funding Agency Category****CB24 Program Course Status****CB25 - Course General Education Status****CB26 - Course Support Course Status**

Delivery Methods

Explain Other:

ASSIST

Queue for Assist No**Last Request From Queue****Last Direct Request** 09/21/2018

ASSIST Preview

Prefix CS**Course Number** 152**Lecture Hours** 54.000**Lab Hours****Content****I. Functions, Relations and Sets**

- Functions (surjections, injections, inverses, composition)
- Relations (reflexivity, symmetry, transitivity, equivalence relations)
- Sets (Venn diagrams, complements, Cartesian products, power sets)
- Pigeonhole principles
- Cardinality and countability

II. Basic Logic

- Propositional logic
- Logical connectives
- Truth tables
- Normal forms (conjunctive and disjunctive)
- Validity
- Predicate logic
- Universal and existential quantification
- Modus ponens and modus tollens
- Limitations of predicate logic

III. Proof Techniques

Notions of implication, converse, inverse, contrapositive, negation, and contradiction
 The structure of mathematical proofs
 Direct proofs
 Proof by counterexample
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Prerequisites

Prerequisite
 CIT 127

Corequisites**Advisories****Objectives**

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- Discussion (classroom)
- Learning Modules
- Reading Assignments
- Project

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- Assess individual projects for evidence of individual work, organization, clarity and accuracy.
- Measure understanding of homework for accuracy and relevancy through quizzes, exams and/or short writing assignments.

- Evaluate individual presentations for evidence of individual work, organization, clarity and accuracy.

Other Texts

Assignments

Attached Files

Attached File

Comp_152 Discrete_Structures.docx (/Form/Course/_DownloadFile/3317/39475?fileId=3)

COMP_SCI_TMC_Updated_October_2016.doc (/Form/Course/_DownloadFile/3317/39475?fileId=4)

Cross Listed Courses

Related