

Electrical Technology

Core Courses

San Joaquin Valley College

Course Outline

Division: Technical Studies
Program: Electrical Technology

Course Number: ELEC 100
Course Name: OSHA Standards for the Construction Industry
Total Semester Units: 3.0
Total Hours: 45
Theory/Lecture Hours: 45
Application/Lab Hours: 0
Externship/Clinical Hours: 0

Course Description:

This course covers OSHA policies, procedures, and standards, as well as construction safety and health principles. Topics include scope and application of the OSHA construction standards. Special emphasis is placed on those areas that are the most hazardous, using OSHA standards as a guide. Upon successful course completion, the student will receive an OSHA 30 Hour Construction Outreach Training Completion Card. Students will be trained in CPR and First Aid.

Course Learning Outcomes

Upon completion of this course, the student should be able to:

1. Identify and explain the purpose, structure, and record keeping requirements of OSHA
2. Explain the employer's responsibility for safety training and education
3. Demonstrate the ability to identify hazards and potential hazards in the construction workplace and the means to avoid, control, and/or prevent them.
4. Demonstrate the ability to perform a job hazard analysis for construction job tasks as applicable to OSHA safety standards as defined in 29 Code of Federal Regulations Part 1926 (29 CFR 1926)
5. Demonstrate the ability to properly use personal protective and lifesaving equipment
6. Develop a Lock Out/Tag Out procedure meeting OSHA minimum requirements
7. Exhibit proper CPR and First Aid techniques

Prerequisites: None

Software: N/A

Textbooks: See Approved Textbook Listing

Grade Item Weights

- 20% Quizzes
- 30% Homework and Projects
- 10% Skills
- 30% Exams
- 10% Professionalism

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Unit Objectives

Unit 1: Introduction to OSHA Standards, OSHA General Duty Clause, Record keeping (CLO 1)

Upon completion of this unit of instruction, the student should be able to:

- 1.1 Describe the purpose, structure and record keeping requirements of the Occupational Safety and Health Act, (OSHA) for the construction industry
 - 1.1.1 Origin and purpose of OSHA standards
 - 1.1.2 Code of Federal Regulations, (CFR)
 - 1.1.3 Paragraph numbering system
 - 1.1.4 Record keeping requirements

Unit 2: Subpart C: General Safety and Health Provision, Competent Person (CLO 2)

Upon completion of this unit of instruction, the student should be able to:

- 2.1 Describe the employer's responsibility for safety training and education
- 2.2 Describe the employer's responsibility to have first aid and medical attention readily available
- 2.3 Describe acceptable industry certifications for the installation, inspection, and testing of pressure vessels
- 2.4 Define the term "Competent Person"

Unit 3: Subpart I: Tools - Hand and Power (CLO 2)

Upon completion of this unit of instruction, the student should be able to:

- 3.1 The general requirements for hand and power tools
- 3.2 The employer's responsibility when hand tools are provided to the employee
- 3.3 The required safety procedures when utilizing:
 - 3.3.1 Power operated hand tools
 - 3.3.2 Abrasive wheels
 - 3.3.3 Woodworking tools
 - 3.3.4 Jacks – lever, ratchet, screw, and hydraulic

Unit 4: Subpart D: Occupational Health and Environmental Controls (emphasis on Hazard Communication) (CLO 3)

Upon completion of this unit of instruction, the student should be able to:

- 4.1 Explain the purpose of container labeling
- 4.2 Create a material safety and data sheet (MSDS)
- 4.3 Explain the requirements for employee training and education
- 4.4 Recognize terms in the MSDS glossary
- 4.5 Identify common health hazards in construction

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- 4.6 Describe the requirements for workplace sanitation
- 4.7 Describe noise exposure permissible limits
- 4.8 Describe the methods utilized to protect employees from dangerous gases, vapors, fumes, dusts, and mists
- 4.9 Apply Subpart D, 1926.56 to determine the required lighting levels of illumination

Unit 5: Subpart F: Fire Protection and Prevention (CLO 3)

Upon completion of this unit of instruction, the student should be able to:

- 5.1 Explain the employer's responsibility to develop a fire prevention program
- 5.2 Explain The requirements for the proper storage and handling of flammable and combustible liquids
- 5.3 Explain The requirements for the use of temporary heating devices

Unit 6: Subpart J: Welding and Cutting (CLO 3)

Upon completion of this unit of instruction, the student should be able to:

- 6.1 The proper methods for the transporting, moving, or storage of compressed gas cylinders.
- 6.2 The requirements for the Use of arc welding and cutting equipment
- 6.3 The requirements for fire prevention
- 6.4 The requirements for ventilation, protection in welding, cutting, and heating

Unit 7: Subpart L: Scaffolds (CLO 3)

Upon completion of this unit of instruction, the student should be able to:

- 7.1 The general requirements for scaffolds utilized in the workplace
- 7.2 Additional requirements applicable to specific types of scaffolds
- 7.3 Specific requirements for the use of aerial lifts
- 7.4 Employer training requirements for those performing work on scaffolds

Unit 8: Subpart M: Fall Protection (CLO 3)

Upon completion of this unit of instruction, the student should be able to:

- 8.1 Explain the scope and application of Subpart M
- 8.2 Explain the employer's duty to provide fall protection training and equipment
- 8.3 Explain fall protection systems, criteria, and practices
- 8.4 Demonstrate the proper procedure to wear, and test, a fall arrest system (harness)

Unit 9: Subpart N: Cranes, Derricks, Hoists, Elevators and Conveyors (CLO 3)

Upon completion of this unit of instruction, the student should be able to:

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- 9.1 The employer's responsibility to comply with the manufacturer's specification for the use of cranes and derricks
- 9.2 The proper use of material hoists, personnel hoists, and elevators
- 9.3 How to determine the safe working load of overhead hoists
- 9.4 The general requirements for the use of conveyors

Unit 10: Subpart O,W, and G: Motor Vehicles, Mechanized Equipment and Marine Operations, Rollover Protective Structures and Overhead Projection; and Signs, Signals and Barricades (CLO 3)

Upon completion of this unit of instruction, the student should be able to:

- 10.1 Explain the general requirements of this subsection for
 - 10.1.1 Motor vehicles
 - 10.1.2 Material handling equipment
 - 10.1.3 Pile driving equipment
 - 10.1.4 Site clearing

Unit 11: Subpart P: Excavations (CLO 3)

Upon completion of this unit of instruction, the student should be able to:

- 11.1 The scope and application applicable to this subpart
- 11.2 Specific excavation requirements
- 11.3 Protective systems requirements
- 11.4 Sloping and benching requirements for excavations

Unit 12: Subpart Q: Concrete and Masonry Construction (CLO 3)

Upon completion of this unit of instruction, the student should be able to:

- 12.1 The scope and application applicable to this subpart
- 12.2 The requirements and proper use of equipment and tools
- 12.3 The requirements for cast in place concrete
- 12.4 The requirements for precast concrete
- 12.5 The requirements for masonry construction

Unit 13: Subpart X: Stairways and Ladders (CLO 3)

Upon completion of this unit of instruction, the student should be able to:

- 13.1 The general requirements of subpart X
- 13.2 The requirements applicable to stairways
- 13.3 The requirements for the proper use of ladders
- 13.4 Program training requirements for the use of ladders

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Unit 14: CFR 1910.146: Confined Space Entry (CLO 3)

Upon completion of this unit of instruction, the student should be able to:

- 14.1 Explain the employer's responsibility with respect to confined spaces
- 14.2 Recognize definitions applicable to this subpart
- 14.3 Define examples of confined spaces
- 14.4 Describe types of hazards in confined spaces
- 14.5 Interpret regulations regarding confined spaces
- 14.6 Explain the training requirements with respect to confined spaces

Unit 15: Subpart H: Materials handling, Storage, and Disposal (CLO 4)

Upon completion of this unit of instruction, the student should be able to:

- 15.1 Explain the general requirements for handling, storage, and disposal of jobsite materials
- 15.2 Explain the proper methods for use of rigging equipment to store materials
- 15.3 Explain the proper methods for disposal of waste materials

Unit 16: Subpart E: Personal Protective and Lifesaving Equipment (CLO 5)

Upon completion of this unit of instruction, the student should be able to:

- 16.1 Explain the requirements for, and demonstrate the proper use of:
 - 16.1.1 Occupational foot protection
 - 16.1.2 Head protection
 - 16.1.3 Hearing protection
 - 16.1.4 Eye and face protection
 - 16.1.5 Respiratory protection
 - 16.1.6 Safety belts, lifelines and lanyards

Unit 17: Subpart K: Electrical (CLO 6)

Upon completion of this unit of instruction, the student should be able to:

- 17.1 Explain the general requirements of Subpart K
- 17.2 Explain the general use requirements for wiring methods, components, and equipment
- 17.3 Develop a proper Lock Out / Tag Out procedure
- 17.4 Explain the requirements for the use of ground fault circuit interrupters
- 17.5 Explain the requirements for an assured equipment grounding program with student demonstration on how to properly test cables and cords for an assured grounding path

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17.6 Definitions applicable to this part

Unit 18: CFR 1910.147 Lock/Out / Tag Out Procedures and Requirements (CLO 6)
Upon completion of this unit of instruction, the student should be able to:

- 18.1 Explain the general requirements for Lock Out/Tag Out procedures
- 18.2 Recognize definitions applicable to this subpart
- 18.3 Explain the purpose of controlling of hazardous energy
- 18.4 Explain and demonstrate the proper use of Tag Out devices
- 18.5 Develop a Lock Out / Tag Out procedure meeting OSHA minimum requirements

Unit 19: CPR/First Aid (CLO 7)

Upon completion of this unit of instruction, the student should be able to:

- 19.1. Recognize the signs and symptoms of medical emergencies requiring BLS
- 19.2. Perform CPR techniques to demonstrate proficiency
- 19.3. Aid someone who is choking
- 19.4. Use AED
- 19.5. List the four emergency action principles
- 19.6. Describe first aid for the following conditions:
 - 19.6.1 Bleeding and shock
 - 19.6.2 Eye and nose injuries
 - 19.6.3 Insect bites and stings
 - 19.6.4 Fractures, dislocations, sprains, and strains
 - 19.6.5 Diabetic emergencies
 - 19.6.6 Poisoning
 - 19.6.7 Heat emergencies
 - 19.6.8 Frost bite
 - 19.6.9 Seizures
 - 19.6.10 Stroke
 - 19.6.11 Burns
 - 19.6.12 Explain how to use the emergency medical system
 - 19.6.13 Demonstrate first aid skills

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Course Outline

Instructional Strategies and Methods for Assessing Student Learning Outcomes:

1. Critical Thinking Tasks and Assignments:

Through discussions, individual and group presentations, written assignments, and research papers and projects, students will demonstrate critical thinking skills and problem solving abilities that meet the standards outlined by the Student Learning Outcomes for this course. Each instructor must maintain a portfolio with examples of all required assignments and activities.

2. Required Reading, Writing, Projects, and Outside of Class Assignments:

Each instructor must maintain a listing of all homework assignments including reading assignments, writing assignments, and projects.

3. Methods to Measure Achievement of Student Learning Outcomes:

Students in this course will be graded in the following categories:

a) Writing Assignments:

- Written homework
- Research papers
- Term or other papers

b) Computational or Non-Computational Problem Solving Demonstrations:

- Exams
- Homework problems
- Quizzes

c) Skill Demonstration:

- Individual and group presentations
- Performance exams
- Skill competencies
- Case studies

d) Objective Examinations:

- Multiple choice
- Matching items
- Fill-in-the-blanks
- Essays
- Short answer
- True or false

The evaluation of student performance is based on the scores received on quizzes, homework assignments, projects, skill performance, and objective examinations. All scores earned are converted to a percentage of the total scores possible within each course. The final grade in each course is determined by the percent ranges converted to the letter grade shown in the chart below.

A grade of 'C' or better is required to pass this course.

90	-	100%	=	A
80	-	89%	=	B
70	-	79%	=	C
65	-	69%	=	D
Below		65%	=	F

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Course Outline

Division: Technical Studies
Program: Electrical Technology

Course Number: ELEC 110
Course Name: Electrical Conduit Bending
Total Semester Units: 2.0
Total Hours: 45
Theory/Lecture Hours: 30
Application/Lab Hours: 15
Externship/Clinical Hours: 0

Course Description:

This course is a study of how to properly calculate, layout, and bend Electrical Metallic Tubing, (EMT) and Rigid Metal Conduit, (RMC) per industry and National Electrical Code standards. This course utilizes both hand bending tools and the use of mechanical and machine type bending equipment.

Course Learning Outcomes

Upon completion of this course, the student should be able to:

1. Interpret and demonstrate all safety standards when working with tools and equipment utilized in the bending of Electrical Metallic Tubing, (EMT) and Rigid Metal Conduit, (RMC) type electrical conduits
2. Interpret and apply the requirements of the National Electrical Code as applied to the application and bending of EMT and Rigid electrical conduit
3. Calculate, layout and correctly form 90-degree bends with hand, mechanical, and machine type benders
4. Calculate, layout and correctly form offset type bends with hand, mechanical, and machine type benders
5. Calculate, layout and correctly form 3 and 4-point saddle type bends with hand, mechanical, and machine type benders
6. Calculate, layout, and correctly form multiple bends in a single conduit with hand, Mechanical and machine type benders
7. Safely and properly use power type machines to cut, ream, and thread Rigid metal conduit, (RMC)

Prerequisites: None

Software: N/A

Textbooks: See Approved Textbook Listing

Grade Item Weights

- 20% Quizzes
- 30% Homework and Projects
- 10% Skills
- 30% Exams
- 10% Professionalism

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Course Outline

Unit Objectives

Unit 1: Safety (CLO 1)

Upon completion of this unit of instruction, the student should be able to:

- 1.1 Interpret all safety practices when working with tools and equipment utilized in the bending of EMT and GRC conduits

Unit 2: National Electrical Code Requirements for EMT type conduit (CLO 2)

Upon completion of this unit of instruction, the student should be able to:

- 2.1 Describe Industry uses for Electrical Metallic Tubing, (EMT)
- 2.2 Interpret Article 358 of the National Electrical Code as it relates to the permitted uses for EMT type conduit

Unit 3: 90 Degree Bends Utilizing Hand, Mechanical and Machine Type Benders with RMC Type Conduit (CLO 2)

Upon completion of this unit of instruction, the student should be able to:

- 3.1 Apply Article 358 of the National Electrical Code to correctly determine the correct radius of bends
- 3.2 Interpret the "star" and "arrow" mark functions on hand, mechanical and machine type benders
- 3.3 Calculate allowances for "take up" and "gain" when forming 90-degree bends with hand, mechanical, and machine type benders
- 3.4 Correctly layout and form 90-degree bends utilizing hand, mechanical, and machine type benders

Unit 4: National Electrical Code Requirements for RMC Type Conduit (CLO 2)

Upon completion of this unit of instruction, the student should be able to:

- 4.1 Describe Industry uses for Rigid Metal Conduit, (RMC)
- 4.2 Interpret Article 344 of the National Electrical Code as it relates to the permitted uses for RMC type conduit
- 4.3 Interpret manufacturer's manuals and procedures to properly use mechanical and machine benders

Unit 5: 90 Degree Bends Utilizing Hand Type Benders with EMT Type Conduit (CLO 3)

Upon completion of this unit of instruction, the student should be able to:

- 5.1 Describe the uses for 90-degree conduit bends
- 5.2 Apply Article 358 of the National Electrical Code to correctly determine the correct radius of bends
- 5.3 Interpret the "star" and "arrow" mark functions on hand, mechanical and machine type benders

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- 5.4 Calculate allowances for “take up” and “gain” when forming 90-degree bends with hand, mechanical, and machine type benders
- 5.5 Correctly layout and form 90-degree bends utilizing hand, mechanical, and machine type benders

Unit 6: Offset Bends Utilizing Hand, Mechanical, and Machine Type Benders with EMT Type Conduit (CLO 4)

Upon completion of this unit of instruction, the student should be able to:

- 6.1 Describe the uses for offset type bends
- 6.2 Determine the correct bending angle for offset type bends
- 6.3 Calculate the correct distance between bends for offset type bends
- 6.4 Calculate the values for “shrink” with offset bends
- 6.5 Calculate the values to form 3 and 4 point offset bends
- 6.6 Correctly layout and form 3 and 4 point offset bends with hand, mechanical, and machine type benders

Unit 7: Offset Bends Utilizing Mechanical, and Machine Type Benders with RMC Type Conduit (CLO 4)

Upon completion of this unit of instruction, the student should be able to:

- 7.1 Determine the correct bending angle for offset type bends
- 7.2 Calculate the correct distance between bends for offset type bends
- 7.3 Calculate the values for “shrink” with offset bends
- 7.4 Calculate the values to form 3 and 4 point offset bends
- 7.5 Correctly layout and form 3 and 4 point offset bends with hand, mechanical, and machine type benders

Unit 8: Saddle Type Bends Utilizing Hand, Mechanical, and Machine Type Benders with EMT Type Conduit (CLO 5)

Upon completion of this unit of instruction, the student should be able to:

- 8.1 Describe the uses for 3 and 4-point saddle type bends
- 8.2 Determine the correct angle to form 3 point and 4-point saddle type bends
- 8.3 Calculate the correct distance between bends for 3 point and 4-point saddle type bends
- 8.4 Calculate the values for “shrink” and “gain” with 3 and 4-point saddle type bends
- 8.5 Correctly layout and form 3 point and 4-point saddle type bends with hand, mechanical, and machine type benders

Unit 9: Saddle Type Bends utilizing Mechanical, and Machine Type Benders with RMC (CLO 5)

Upon completion of this unit of instruction, the student should be able to:

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- 9.1 Determine the correct angle to form 3 point and 4-point saddle type bends
- 9.2 Calculate the correct distance between bends for 3 point and 4-point saddle type bends
- 9.3 Calculate the values for "shrink" and "gain" with 3 and 4-point saddle type bends
- 9.4 Correctly layout and form 3 point and 4-point saddle type bends with hand, mechanical, and machine type benders

Unit 10: Multiple Bends in a Single Length of EMT Conduit Utilizing Hand, Mechanical, and Machine Type Benders (CLO 6)

Upon completion of this unit of instruction, the student should be able to:

- 10.1 Determine the correct layout when forming multiple bends in a single length of conduit
- 10.2 Calculate values for "shrink" and "gain" when forming multiple bends in a single length of conduit
- 10.3 Apply the "push through" bending method when forming multiple bends in a single length of conduit
- 10.4 Correctly layout and form multiple bends in a single length of conduit with hand, mechanical, and machine type benders

Unit 11: Multiple Bends in a Single Length of RMC Conduit Utilizing Hand, Mechanical, and Machine Type Benders (CLO 6)

Upon completion of this unit of instruction, the student should be able to:

- 11.1 Determine the correct layout when forming multiple bends in a single length of conduit
- 11.2 Calculate values for "shrink" and "gain" when forming multiple bends in a single length of conduit
- 11.3 Apply the "push through" bending method when forming multiple bends in a single length of conduit
- 11.4 Correctly layout and form multiple bends in a single length of conduit with hand, mechanical, and machine type benders

Unit 12: Power Operated Pipe Threading Machines for use with RMC Conduit (CLO 7)

Upon completion of this unit of instruction, the student should be able to:

- 12.1 Interpret and demonstrate all required safety procedures when using power operated
- 12.2 Interpret manufacturer's manuals and procedures for the properly use of mechanical and machine benders
- 12.3 Demonstrate proficiency in cutting, threading, and reaming conduits

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Instructional Strategies and Methods for Assessing Student Learning Outcomes:

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- Term or other papers

b) Computational or Non-Computational Problem Solving Demonstrations:

- Exams
- Homework problems
- Quizzes

c) Skill Demonstration:

- Individual and group presentations
- Performance exams
- Skill competencies
- Case studies

d) Objective Examinations:

- Multiple choice
- Matching items
- Fill-in-the-blanks
- Essays
- Short answer
- True or false

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65	-	69%	=	D
Below		65%	=	F

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Course Outline

Division: Technical Studies
Program: Electrical Technology

Course Number: ELEC 120
Course Name: Blueprint Reading for Electricians
Total Semester Units: 5.0
Total Hours: 90
Theory/Lecture Hours: 60
Application/Lab Hours: 30
Externship/Clinical Hours: 0

Course Description:

This course is designed to introduce students to architectural plans utilized in the construction industry for residential and commercial construction with a focus on the electrical trade. They will also develop the skills needed to interpret information conveyed on blueprints and apply these skills in subsequent coursework.

Course Learning Outcomes

Upon completion of this course, the student should be able to:

1. Interpret the appropriate scales, plan views, lines and symbols utilized in construction blueprints for the electrical and related trades as Defined by the American Institute of Architects, (AIA) and American National Standards Institute, (ANSI)
2. Use an architect's scale to determine dimensions on blueprints and floor plans
3. Interpret the basic electrical design components of a residential occupancy blueprint
4. Interpret the basic electrical design components of a commercial occupancy blueprint
5. Identify types of construction documents

Prerequisites: None

Software: N/A

Textbooks: See Approved Textbook Listing

Grade Item Weights

- 20% Quizzes
- 30% Homework and Projects
- 10% Skills
- 30% Exams
- 10% Professionalism

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Unit Objectives

Unit 1: Construction Blueprints (CLO 1)

Upon completion of this unit of instruction, the student should be able to:

- 1.1 Describe the function of the American Institute of Architects, (AIA) and the American National Standards Institute, (ANSI) as they relate to construction blueprints
- 1.2 Explain various blueprint drawings and their purpose
- 1.3 Differentiate between structural, electrical, plumbing, and mechanical blueprints
- 1.4 Interpret the standardized scales utilized on construction blueprints
- 1.5 Interpret the various plan views utilized on construction blueprints
- 1.6 Interpret how detail views are utilized on construction blueprints

Unit 2: Architect's Scales (CLO 2)

Upon completion of this unit of instruction, the student should be able to:

- 2.1 Interpret the different scales on an architect's scale
- 2.2 Utilize an architect's scale to determine dimensions on blueprints and floor plans
- 2.3 Calculate a "multiplier" when reproduced plans are no longer to scale
- 2.4 Draw a simple plan view floor plan to scale using an architect's scale

Unit 3: Electrical Components of Residential Construction Blueprints (CLO 3)

Upon completion of this unit of instruction, the student should be able to:

- 3.1 Recognize electrical symbols specific to residential construction blueprints
- 3.2 Interpret a basic residential occupancy power plan layout
- 3.3 Interpret a basic residential occupancy lighting plan layout
- 3.4 Interpret a basic residential occupancy electrical distribution system layout

Unit 4: Electrical Components of a Commercial Occupancy Blueprint (CLO 4)

Upon completion of this unit of instruction, the student should be able to:

- 4.1 Recognize electrical symbols specific to commercial construction blueprints
- 4.2 Interpret a basic commercial occupancy power plan layout
- 4.3 Interpret a basic commercial occupancy lighting plan layout
- 4.4 Interpret a basic commercial occupancy electrical distribution system layout

Unit 5: Construction Documents (CLO 5)

Upon completion of this unit of instruction, the student should be able to:

- 5.1 The different types of construction documents
- 5.2 Invitation to bid documents
- 5.3 Instructions to bidders
- 5.4 Bid form

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- 5.5 General conditions
- 5.6 Specifications
- 5.7 Working drawings
- 5.8 "As Built" drawings

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Instructional Strategies and Methods for Assessing Student Learning Outcomes:

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Course Outline

Division: Technical Studies
Program: Electrical Technology

Course Number: ELEC 130
Course Name: Technical Math and Electric Circuits
Total Semester Units: 10.0
Total Hours: 180
Theory/Lecture Hours: 120
Application/Lab Hours: 60
Externship/Clinical Hours: 0

Course Description:

This course is a study of mathematics used in the electrical trade with an application of direct and alternating current.

Course Learning Outcomes

Upon completion of this course, the student should be able to:

1. Demonstrate proficiency by correctly calculating and solving problems with fractions, ratios, decimals, proportion, square roots, English to metric system conversions, powers of ten, unknown angles and sides of triangles, and word problems
2. Demonstrate proficiency in drawing and analyzing direct current electrical circuit theory for series, parallel, and combination circuits with Ohm's Law
3. Apply National Electrical requirements for the proper selection and sizing of conductors
4. Explain magnetic and electro-magnetic principles
5. Calculate RMS, peak, and phase shift values for voltage and current in alternating current sine waves

Prerequisites: None

Software: N/A

Textbooks: See Approved Textbook Listing

Grade Item Weights

- 20% Quizzes
- 30% Homework and Projects
- 10% Skills
- 30% Exams
- 10% Professionalism

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Course Outline

Unit Objectives

Unit 1: Technical Math (CLO 1)

Upon completion of this unit of instruction, the student should be able to:

- 1.1 Demonstrate Proficiencies in Calculating Values for Problems with:
 - 1.1.1 Fractions
 - 1.1.2 Ratio, and proportion
 - 1.1.3 Decimals
 - 1.1.4 Square roots
 - 1.1.5 Metric system and conversions
 - 1.1.6 Powers of ten
 - 1.1.7 Triangles with unknown sides and angles
 - 1.1.8 Word problems

Unit 2: Direct Circuit Electrical Circuits and Ohm's Law (CLO 2)

Upon completion of this unit of instruction, the student should be able to:

- 2.1 Interpret and use electrical industry standardized symbols to draw electrical circuits
- 2.2 Calculate electrical circuit values for voltage, current, resistance, and power using Ohm's Law
- 2.3 Properly apply all safety requirements when assembling circuits and taking electrical readings on energized circuits
- 2.4 Assemble series, parallel and combination circuits to industry standards
- 2.5 Obtain electrical readings and prove values taken with Ohm's Law

Unit 3: Electrical Conductors (CLO 3)

Upon completion of this unit of instruction, the student should be able to:

- 3.1 describe types of conductors used in the electrical industry and their sizes based on the American Wire Gauge, (AWG) and circular mil
- 3.2 Calculate the proper sizing and allowable ampacity of conductors
- 3.3 Calculate conductor fill and de-rating factors
- 3.4 Apply Article 310, and Chapter 9 tables of the National Electrical Code
- 3.5 Calculate voltage drop on conductors
- 3.6 Calculate temperature effects on conductors

Unit 4: Magnetism (CLO 4)

Upon completion of this unit of instruction, the student should be able to:

- 4.1 Explain the characteristics of magnetism
- 4.2 Explain the operation of electromagnets
- 4.3 Explain the generation of electricity

San Joaquin Valley College

Course Outline

- 4.4 Determine the polarity of electromagnets and current flow with the “Left Hand Rule”
- 4.5 Explain Lenz’s Law
- 4.6 Define terms used to describe magnetism and magnetic quantities

Unit 5: Alternating Current (CLO 5)

Upon completion of this unit of instruction, the student should be able to:

- 5.1 Explain terms associated with alternating current
- 5.2 Describe sine wave forms
- 5.3 Calculate instantaneous, rms, and peak voltage, and current values for a sine wave
- 5.4 Calculate power factor and phase shift relationships for circuits containing resistance, inductance and capacitance
- 5.5 Assemble alternating current circuits containing r , x_l , and x_c components industry standards
- 5.6 Obtain electrical readings and prove values taken with Ohm’s Law

San Joaquin Valley College

Course Outline

Instructional Strategies and Methods for Assessing Student Learning Outcomes:

1. Critical Thinking Tasks and Assignments:

Through discussions, individual and group presentations, written assignments, and research papers and projects, students will demonstrate critical thinking skills and problem solving abilities that meet the standards outlined by the Student Learning Outcomes for this course. Each instructor must maintain a portfolio with examples of all required assignments and activities.

2. Required Reading, Writing, Projects, and Outside of Class Assignments:

Each instructor must maintain a listing of all homework assignments including reading assignments, writing assignments, and projects.

3. Methods to Measure Achievement of Student Learning Outcomes:

Students in this course will be graded in the following categories:

a) Writing Assignments:

- Written homework
- Research papers
- Term or other papers

b) Computational or Non-Computational Problem Solving Demonstrations:

- Exams
- Homework problems
- Quizzes

c) Skill Demonstration:

- Individual and group presentations
- Performance exams
- Skill competencies
- Case studies

d) Objective Examinations:

- Multiple choice
- Matching items
- Fill-in-the-blanks
- Essays
- Short answer
- True or false

The evaluation of student performance is based on the scores received on quizzes, homework assignments, projects, skill performance, and objective examinations. All scores earned are converted to a percentage of the total scores possible within each course. The final grade in each course is determined by the percent ranges converted to the letter grade shown in the chart below.

A grade of 'C' or better is required to pass this course.

90	-	100%	=	A
80	-	89%	=	B
70	-	79%	=	C
65	-	69%	=	D
Below		65%	=	F

San Joaquin Valley College

Course Outline

Division: Technical Studies
Program: Electrical Technology

Course Number: ELEC 200
Course Name: Residential Wiring
Total Semester Units: 5.0
Total Hours: 90
Theory/Lecture Hours: 60
Application/Lab Hours: 30
Externship/Clinical Hours: 0

Course Description:

This course introduces the student to the elements of residential type construction with an emphasis on wiring principles and basic residential design. This course also allows the student perform a "hands on" component of wiring a basic residential structure. Both components are completed in strict accordance with the Requirements of the National Electrical Code.

Course Learning Outcomes

Upon completion of this course, the student should be able to:

1. Identify symbols used in residential electrical design plans
2. Describe approved wiring methods, materials, circuitry, and devices used in residential construction
3. Interpret the National Electrical Code Requirements for residential dwellings
4. Design a basic residential electrical blueprint design which meets the requirements of the National Electrical Code
5. Wire a basic residential structure to National Electrical Code requirements

Prerequisites: ELEC 100, ELEC 110, ELEC 120, ELEC 130

Software: N/A

Textbooks: See Approved Textbook Listing

Grade Item Weights

- 20% Quizzes
- 30% Homework and Projects
- 10% Skills
- 30% Exams
- 10% Professionalism

San Joaquin Valley College

Course Outline

Unit Objectives

Unit 1: Residential Design Plans (CLO 1)

Upon completion of this unit of instruction, the student should be able to:

- 1.1 Identify general purpose, specialty receptacle, and lighting circuits
- 1.2 Identify single, three way, and four way lighting switching systems
- 1.3 Identify "home run" symbolisms and circuitry
- 1.4 Identify types of residential load centers and service equipment
- 1.5 Identify information conveyed in a residential panel schedule

Unit 2: Residential Wiring (CLO 2)

Upon completion of this unit of instruction, the student should be able to:

- 2.1 Describe approved electrical wiring methods for use in residential construction
- 2.2 Describe typical outlet and junction boxes approved for use in residential construction
- 2.3 Describe receptacle outlet circuitry
- 2.4 Describe lighting outlet circuitry with single, three and four-way switching
- 2.5 Describe the proper use of 15 and 20 ampere branch circuits
- 2.6 Identify approved outlet, switch, and overcurrent protective devices
- 2.7 Describe service entrance equipment and panel boards approved for use in residential construction
- 2.8 Describe approved electrical service and branch circuit grounding methods
- 2.9 Draw the circuitry and assemble a "conduit block" with receptacle, and three and four way switching systems

Unit 3: National Electrical Code Requirements for Residential Construction (CLO 3)

Upon completion of this unit of instruction, the student should be able to:

- 3.1 Interpret the following articles of The National Electrical Code:
 - 3.1.1 Article 90 – Introduction
 - 3.1.2 Article 110 – Installation, General Requirements
 - 3.1.3 Article 200 – Wiring and Protection
 - 3.1.4 Article 210 – Branch Circuits
 - 3.1.5 Article 220 – Branch Circuit, Feeders, and Service Load Calculations
 - 3.1.6 Article 230 – Electrical Services
 - 3.1.7 Article 240 – Overcurrent Protection
 - 3.1.8 Article 250 – Grounding and Bonding
 - 3.1.9 Article 300 – Wiring Methods
 - 3.1.10 Article 310 – Conductors for General Wiring

San Joaquin Valley College

Course Outline

- 3.1.11 Article 314 – Outlet, Pull, and Junction Boxes
- 3.1.12 Article 320 – AC Type Cable
- 3.1.13 Article 334 – NM Type Cable
- 3.1.14 Article 404 – Switches
- 3.1.15 Article 406 – Receptacles, Cord Connections, and Plugs
- 3.1.16 Article 408 – Switchboards and Panel boards
- 3.1.17 Article 410 - Lighting Fixtures
- 3.1.18 Article 422 - Appliances

Unit 4: Residential Wiring Design (CLO 4)

Upon completion of this unit of instruction, the student should be able to:

- 4.1 Design a basic residential electrical blueprint plan meeting all the requirements of the national electrical code
- 4.2 Create a lighting fixture schedule
- 4.3 Create a panel schedule based on calculated electrical loads derived from the design
- 4.4 Produce a set of electrical load calculations based on the designed electrical plan

Unit 5: Wiring of a Basic Residential Structure (CLO 5)

Upon completion of this unit of instruction, the student should be able to:

- 5.1 Layout and wire general purpose receptacle outlets and their branch circuitry
- 5.2 Layout and wire specialty receptacles and circuitry
- 5.3 Layout and wire a lighting system with single, three and four-way circuitry
- 5.4 Layout and wire a residential electrical service
- 5.5 Install and wire overcurrent protective devices
- 5.6 Install an approved grounding system for the residential service

San Joaquin Valley College

Course Outline

Instructional Strategies and Methods for Assessing Student Learning Outcomes:

1. Critical Thinking Tasks and Assignments:

Through discussions, individual and group presentations, written assignments, and research papers and projects, students will demonstrate critical thinking skills and problem solving abilities that meet the standards outlined by the Student Learning Outcomes for this course. Each instructor must maintain a portfolio with examples of all required assignments and activities.

2. Required Reading, Writing, Projects, and Outside of Class Assignments:

Each instructor must maintain a listing of all homework assignments including reading assignments, writing assignments, and projects.

3. Methods to Measure Achievement of Student Learning Outcomes:

Students in this course will be graded in the following categories:

a) Writing Assignments:

- Written homework
- Research papers
- Term or other papers

b) Computational or Non-Computational Problem Solving Demonstrations:

- Exams
- Homework problems
- Quizzes

c) Skill Demonstration:

- Individual and group presentations
- Performance exams
- Skill competencies
- Case studies

d) Objective Examinations:

- Multiple choice
- Matching items
- Fill-in-the-blanks
- Essays
- Short answer
- True or false

The evaluation of student performance is based on the scores received on quizzes, homework assignments, projects, skill performance, and objective examinations. All scores earned are converted to a percentage of the total scores possible within each course. The final grade in each course is determined by the percent ranges converted to the letter grade shown in the chart below.

A grade of 'C' or better is required to pass this course.

90	-	100%	=	A
80	-	89%	=	B
70	-	79%	=	C
65	-	69%	=	D
Below		65%	=	F

San Joaquin Valley College

Course Outline

Division: Technical Studies
Program: Electrical Technology

Course Number: ELEC 210
Course Name: Commercial and Industrial Wiring
Total Semester Units: 10.0
Total Hours: 180
Theory/Lecture Hours: 120
Application/Lab Hours: 60
Externship/Clinical Hours: 0

Course Description:

This course covers the theory and application of electrical wiring systems utilized in commercial and industrial buildings inclusive of general wiring, electrical systems, alternating current motors, transformers, lighting systems and load calculations while all in adherence to the requirements of the National Electrical Code.

Course Learning Outcomes

Upon completion of this course, the student should be able to:

1. Evaluate the wiring methods, materials, and devices used in commercial and industrial facilities
2. Evaluate single phase, and three phase alternating current applications
3. Evaluate, discuss, and calculate values for single and three phase transformers and demonstrate proficiency in transformer circuit computations and connections
4. Identify, single, and three phase motor applications and demonstrate proficiency in motor circuit computations and connections
5. Compare different types of lighting systems used in commercial and industrial applications and apply calculations to produce a layout
6. Interpret and apply all National Electrical Code requirements to create a single line diagram distribution system
7. Complete a basic commercial / industrial facility blueprint design applying motor, transformer, power distribution, and lighting systems meeting all the requirements of the National Electrical Code

Prerequisites: ELEC 100, ELEC 110, ELEC 120, ELEC 130

Software: N/A

Textbooks: See Approved Textbook Listing

Grade Item Weights

- 20% Quizzes
- 30% Homework and Projects
- 10% Skills
- 30% Exams
- 10% Professionalism

San Joaquin Valley College

Course Outline

Unit Objectives

Unit 1: Commercial and Industrial Building Wiring Methods (CLO 1)

Upon completion of this unit of instruction, the student should be able to:

- 1.1 Describe raceway systems and wiring used in commercial / industrial facilities
 - 1.1.1 Electrical Metallic Tubing
 - 1.1.2 Rigid Metal Conduit
 - 1.1.3 Intermediate Metal Conduit
 - 1.1.4 Surface Raceway Systems
 - 1.1.5 Busway Systems
 - 1.1.6 Cable Tray Systems
 - 1.1.7 Service Entrance Equipment
 - 1.1.8 Service Entrance Conductors
 - 1.1.9 Feeder Conductors
 - 1.1.10 Panel boards and Load centers
- 1.2 Interpret the National Electrical Code requirements for receptacle outlet and lighting Branch Circuit Wiring
- 1.3 Correctly choose conductors types and calculate sizes based on application, amperage, insulation type and National Electrical Code Requirements
- 1.4 Define and calculate "long Continuous Load" factors for conductors
- 1.5 Calculate Conductor "fill" and apply de-rating factors
- 1.6 Calculate values for voltage drop on branch and feeder conductors
- 1.7 Describe the types of conductors, and use of, low voltage wiring systems for voice, data, lighting, signal, and control
- 1.8 Interpret the National Electrical Code wiring requirements for separately derived systems with respect to solar photovoltaic systems
- 1.9 Describe:
 - 1.9.1 The purpose and location of overcurrent devices
 - 1.9.2 Interrupting ratings of fuses and circuit breakers
 - 1.9.3 Short circuits
 - 1.9.4 Operation and application of single element and dual element fuses
 - 1.9.5 Function and operation of ground fault circuit interrupters

Unit 2: Single Phase and Three Phase Systems (CLO 2)

Upon completion of this unit of instruction, the student should be able to:

- 2.1 Differentiate the differences between single and three phase systems
- 2.2 Explain uses for single phase systems in commercial / industrial facilities
- 2.3 Calculate values for KVA, KW, and KVAR for single phase systems

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Course Outline

- 2.4 Explain uses for three phase systems in commercial / industrial facilities
- 2.5 Calculate values for KVA, KW, and KVAR for three phase systems
- 2.6 Calculate loads, create single and three phase panel schedules, and evaluate both as choices for distribution systems
- 2.7 Explain the use of, and calculate values for power factor correction capacitors and their associated wiring per National Electrical Code requirements

Unit 3: Single and Three Phase Transformers (CLO 3)

Upon completion of this unit of instruction, the student should be able to:

- 3.1 Evaluate and discuss applications for single and three phase transformers
- 3.2 Examine and demonstrate proficiency in drawing connections and analyzing power, voltage and current in single phase and three phase Wye and Delta transformers
- 3.3 Demonstrate proficiency in wiring of single and three phase transformers
- 3.4 Accurately interpret and apply Article 450 of the National Electrical Code requirements for transformers

Unit 4: Single and Three Phase Motors (CLO 4)

Upon completion of this unit of instruction, the student should be able to:

- 4.1 Identify single and three phase motor applications and demonstrate a proficiency in motor circuit computations
- 4.2 Examine and demonstrate proficiency in connecting, running, and testing single and three phase motors to industry standards
- 4.3 Accurately interpret and apply Article 430 of the National Electrical Code requirements for motors

Unit 5: Lighting Systems (CLO 5)

Upon completion of this unit of instruction, the student should be able to:

- 5.1 Compare and describe the function of operation of:
 - 5.1.1 Incandescent lighting
 - 5.1.2 Fluorescent lighting
 - 5.1.3 High Intensity Discharge lighting
 - 5.1.4 Light Emitting Diode, (LED) lighting
 - 5.1.5 Low Voltage Lighting
- 5.2 Calculate foot-candle levels and create a basic lighting layout plan
- 5.3 Apply appropriate article of the National Electrical Code for the installation and connection of lighting fixtures

Unit 6: Single Line Diagrams (CLO 6)

Upon completion of this unit of instruction, the student should be able to:

- 6.1 Define all the components and function of single line distribution diagrams

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Course Outline

- 6.2 Calculate all required values associated with single line diagrams
- 6.3 Interpret and apply all the applicable articles of the National Electrical Code as they relate to single line diagrams
- 6.4 Create a single line diagram based on a set of given specifications

Unit 7: Commercial / Industrial Facility Blueprint Design (CLO 7)

Upon completion of this unit of instruction, the student should be able to:

- 7.1 Design an electrical blueprint for a commercial / industrial facility based on a set of specifications given inclusive of, while meeting all the requirements of the National Electrical code for the following:
 - 7.1.1 General office electrical requirements
 - 7.1.2 Specialty office electrical requirements
 - 7.1.3 Manufacturing area specialty electrical equipment requirements
 - 7.1.4 Lighting system
 - 7.1.5 Power distribution system
 - 7.1.6 Single line diagram
 - 7.1.7 Set of load calculations

San Joaquin Valley College

Course Outline

Instructional Strategies and Methods for Assessing Student Learning Outcomes:

1. Critical Thinking Tasks and Assignments:

Through discussions, individual and group presentations, written assignments, and research papers and projects, students will demonstrate critical thinking skills and problem solving abilities that meet the standards outlined by the Student Learning Outcomes for this course. Each instructor must maintain a portfolio with examples of all required assignments and activities.

2. Required Reading, Writing, Projects, and Outside of Class Assignments:

Each instructor must maintain a listing of all homework assignments including reading assignments, writing assignments, and projects.

3. Methods to Measure Achievement of Student Learning Outcomes:

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a) Writing Assignments:

- Written homework
- Research papers
- Term or other papers

b) Computational or Non-Computational Problem Solving Demonstrations:

- Exams
- Homework problems
- Quizzes

c) Skill Demonstration:

- Individual and group presentations
- Performance exams
- Skill competencies
- Case studies

d) Objective Examinations:

- Multiple choice
- Matching items
- Fill-in-the-blanks
- Essays
- Short answer
- True or false

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70	-	79%	=	C
65	-	69%	=	D
Below		65%	=	F

San Joaquin Valley College

Course Outline

Division: Technical Studies
Program: Electrical Technology

Course Number: ELEC 220
Course Name: Programmable Logic Controllers / Industrial Electronics
Total Semester Units: 5
Total Hours: 90
Theory/Lecture Hours: 60
Application/Lab Hours: 30
Externship/Clinical Hours: 0

Course Description:

This course presents basic concepts and applications of PLCs such as the PLC language, performing installation and diagnostic functions, using program tools, basic communications and logic operations. The practical instruction of this course is performed with Allen Bradley equipment and RSLogix software, both of which are predominantly used within the manufacturing industry.

Course Learning Outcomes

Upon completion of this course, the student will be able to:

1. Discuss the PLC, its processor unit, memory, language, logic, and wiring methods
2. Describe programming devices and methods with logic Controllers
3. Describe Programmable Logic Controller functions and connect devices to the PLC
4. Create PLC ladder diagrams to create PLC programs and utilize interface communication devices to go online, run, and test a PLC program
5. Demonstrate proper safety methods to troubleshoot PLC programs and devices
6. Explain the use and function of electronic devices used in the electrical industry
7. Demonstrate the computer skills needed in professional interaction

Prerequisites: ELEC 100, ELEC 110, ELEC 120, ELEC 130

Software: N/A

Textbooks: See Approved Textbook Listing

Grade Item Weights

- 20% Quizzes
- 30% Homework and Projects
- 10% Skills
- 30% Exams
- 10% Professionalism

San Joaquin Valley College

Course Outline

Unit Objectives

Unit 1: Fundamentals (CLO 1)

Upon completion of this unit of instruction the student will be able to:

- 1.1 Discuss PLC applications
- 1.2 Identify the different types of PLCs and their components
- 1.3 Define the processor and the different types of memory
- 1.4 Discuss ladder logic and symbols
- 1.5 Identify PLC wiring methods

Unit 2: Programming Devices and Methods with Logic Controllers (CLO 2)

Upon completion of this unit of instruction the student will be able to:

- 2.1 Describe programming devices
- 2.2 Describe programming methods
- 2.3 Describe common operating modes found in PLC's

Unit 3: Programmable Logic Controller functions and wiring (CLO 3)

Upon completion of this unit of instruction the student will be able to:

- 3.1 Describe the fundamentals of the PLC input and output, (I/O) system
- 3.2 Describe an internal coil
- 3.3 Describe the NOT function
- 3.4 Describe the NAND and NOR function
- 3.5 Describe forced inputs and outputs
- 3.6 Describe the functions of timers and counters
- 3.7 Describe low and high voltage DC input modules
- 3.8 Define AC input modules
- 3.9 Explain solid state outputs
- 3.10 Describe a dry contact relay
- 3.11 Describe PLC wiring techniques
- 3.12 Connect input and output devices to the PLC

Unit 4: Programming a PLC with Allen Bradley RSLogix software (CLO 4)

Upon completion of this unit of instruction the student will be able to:

- 4.1 Describe the creation of a ladder diagram
- 4.2 Open a new file
- 4.3 Create ladder diagrams using RSLogix software
- 4.4 Add programming rungs and instructions
- 4.5 Assign and edit addresses for input and output components
- 4.6 Add input and output component symbols to a ladder diagram
- 4.7 Write programs and utilize interface communication to go online to a PLC
- 4.8 Run and test PLC programs

San Joaquin Valley College

Course Outline

Unit 5: Troubleshooting (CLO 5)

Upon completion of this unit of instruction the student will be able to:

- 5.1 Demonstrate proper safety methods to troubleshoot a PLC program and devices
- 5.2 Discuss troubleshooting functions and devices
- 5.3 Use the help function
- 5.4 Explain program monitoring and forcing
- 5.5 Describe a fault register
- 5.6 Discuss analog register reading

Unit 6: Industrial Electronics (CLO 6)

Upon completion of this unit of instruction the student will be able to:

- 6.1 Identify different types of electronics devices and solid state components used in the Electrical Industry
- 6.2 Explain the use of SCR's
- 6.3 Explain the functions, operations, and characteristics of integrated circuits, (IC's)
- 6.4 Explain the functions and operations of photo-operated devices

Unit 7: Computer Proficiencies (CLO 7)

Upon completion of this unit of instruction the student will be able to:

- 7.1 Demonstrate proficiency in Microsoft Office Applications to create technical reports
- 7.2 Demonstrate proficiency in industry computer applications
- 7.3 Demonstrate proficiency in navigating a computer

San Joaquin Valley College

Course Outline

Instructional Strategies and Methods for Assessing Student Learning Outcomes:

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2. Required Reading, Writing, Projects, and Outside of Class Assignments:

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3. Methods to Measure Achievement of Student Learning Outcomes:

Students in this course will be graded in the following categories:

a) Writing Assignments:

- Written homework
- Research papers
- Term or other papers

b) Computational or Non-Computational Problem Solving Demonstrations:

- Exams
- Homework problems
- Quizzes

c) Skill Demonstration:

- Individual and group presentations
- Performance exams
- Skill competencies
- Case studies

d) Objective Examinations:

- Multiple choice
- Matching items
- Fill-in-the-blanks
- Essays
- Short answer
- True or false

The evaluation of student performance is based on the scores received on quizzes, homework assignments, projects, skill performance, and objective examinations. All scores earned are converted to a percentage of the total scores possible within each course. The final grade in each course is determined by the percent ranges converted to the letter grade shown in the chart below.

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Below		65%	=	F

Electrical Technology

General Education Courses

San Joaquin Valley College

Course Outline

Division: Business, Health, & Technical Studies
Program: General Education

Course Number: ENG 121
Course Name: Composition and Reading – Part A
Total Semester Units: 3
Total Hours: 45
Theory/Lecture Hours: 45
Application/Lab Hours: 0
Externship/Clinical Hours: 0

Course Description:

This is the first in a 2-part college level English course. In this course, students will learn the foundation of critically reading and writing in a variety of rhetorical modes. Students will read various essays and literature, and apply critical analysis to their own writing. Students will practice all aspects of the writing process, and by the end of Part B, they will meet a goal of writing a minimum of 6000 words through a variety of assignments.

Recommended Prerequisites: Completion of the Study Plan created through self-assessment in MyWritingLab in the Student Center

Course Learning Outcomes

Upon completion of this course, the student will be able to:

1. Apply elements of the writing process, including planning, shaping, drafting, revising, and editing to create original compositions for various purposes and audiences
2. Write in a variety of rhetorical modes, which can include: narration, description, definition, cause-effect, comparison/contrast, and classification
3. Identify and critically evaluate the major ideas, themes, methods, and other features in college level essays and literature and apply to personal and professional writing
4. Incorporate principles of research, sources, and APA documentation into original writing
5. Describe the connection between verbal and written communication and use these skills to present him/herself professionally
6. Apply conventions of English grammar, spelling, punctuation, and sentence structure to college-level writing

Grade Item Weights

- 17% Quizzes
- 50% Projects/Homework
- 33% Exams

San Joaquin Valley College

Course Outline

Unit Objectives

Unit 1: Principles of the Writing Process

Upon completion of this unit of instruction the student will be able to:

- 1.1 Explain and utilize planning, shaping, drafting, revising, and editing skills
- 1.2 Identify steps of the Writing Process by reading and analyzing literary examples
- 1.3 Utilize planning and shaping in writing
- 1.4 Demonstrate pre-writing techniques
- 1.5 Apply revising strategies to improve his/her own writing
- 1.6 Work in collaboration with peers in the revision process
- 1.7 Use electronic resources to revise and develop writing
- 1.8 Apply APA format to all types of writing assignments

Unit 2: Elements of a Complete, Coherent Essay

Upon completion of this unit of instruction the student will be able to:

- 2.1 Identify and utilize basic essay formats
- 2.2 Create effective introductions and conclusions
- 2.3 Describe the elements of a thesis and identify them in written examples
- 2.4 Construct accurate and thoughtful thesis statements and topic sentences
- 2.5 Create unity and coherence by using transitional techniques and phrases

Unit 3: Critical Reasoning and Analytical Reading

Upon completion of this unit of instruction the student will be able to:

- 3.1 Identify the need for planning, flexibility, and metacognition in the thinking process
- 3.2 Employ close reading techniques to discuss and evaluate various literary examples
- 3.3 Identify the differences between verbal and written communication and use these skills to present professional writing
- 3.4 Use analytical skills to connect written and verbal communication
- 3.5 Analyze and evaluate various rhetorical modes of communication
- 3.6 Apply critical analysis to personal and professional writing
- 3.7 Analyze and evaluate various writing with peers

Unit 4: Writing Skills

Upon completion of this unit of instruction the student will be able to:

- 4.1 Demonstrate correct use of grammar, spelling, punctuation, sentence structure and word choice in college level writing
- 4.2 Demonstrate effective use of description and detail
- 4.3 Write in a variety of rhetorical modes, such as narration, description, definition, argument, persuasion, exemplification, cause-effect, comparison/contrast, classification, and analysis
- 4.4 Edit and proofread personal writing with peers
- 4.5 Practice enough writing to meet end goal of 6000 words by the end of Part B

San Joaquin Valley College

Course Outline

Instructional Strategies and Methods for Assessing Student Learning Outcomes:

1. Critical Thinking Tasks and Assignments:

Through discussions, individual and group presentations, written assignments, and research papers and projects, students will demonstrate critical thinking skills and problem solving abilities that meet the standards outlined by the Student Learning Outcomes for this course. Each instructor must maintain an instructor portfolio with examples of all required assignments and activities.

2. Required Reading, Writing, Projects, and Outside of Class Assignments:

Each instructor must maintain a listing of all homework assignments including reading assignments, writing assignments, and projects.

3. Methods to Measure Achievement of Student Learning Outcomes:

Students in this course will be graded in the following categories:

a) Writing Assignments:

- Written homework
- Research papers
- Term or other papers

b) Computational or Non-Computational Problem Solving Demonstrations:

- Exams
- Homework problems
- Quizzes

c) Skill Demonstration:

- Individual and group presentations
- Performance exams
- Skill competencies
- Case studies

d) Objective Examinations:

- Multiple choice
- Matching items
- Fill-in-the-blanks
- Essays
- Short answer
- True or false

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90	-	100%	=	A
80	-	89%	=	B
70	-	79%	=	C
65	-	69%	=	D
Below		65%	=	F

San Joaquin Valley College

Course Outline

Division: Business, Health, & Technical Studies
Program: General Education

Course Number: ENG 122
Course Name: Composition and Reading – Part B
Total Semester Units: 3
Total Hours: 45
Theory/Lecture Hours: 45
Application/Lab Hours: 0
Externship/Clinical Hours: 0

Course Description:

This course is the second portion of our college level English course. By building on the skills learned in Part A, students will continue to critically read and write in a variety of rhetorical modes. Students will read various essays and literature, and apply critical analysis to their own writing. In this course they will build information literacy skills through research, and describe the connection between effective communication and professionalism. Students will complete their goal of writing a minimum of 6000 words.

Course Learning Outcomes

Upon completion of this course, the student will be able to:

1. Apply elements of the writing process, including planning, shaping, drafting, revising, and editing to create original compositions for various purposes and audiences
2. Write in a variety of rhetorical modes, which can include: argument, persuasion, exemplification, and analysis
3. Identify and critically evaluate the major ideas, themes, methods, and other features in college level essays and literature and apply to personal and professional writing
4. Incorporate principles of research, sources, and APA documentation into original writing
5. Demonstrate information literacy, including analytical use of an electronic environment, to effectively research
6. Describe the connection between verbal and written communication and use these skills to present him/herself professionally

Grade Item Weights

- 17% Quizzes
- 50% Projects/Homework
- 33% Exams

San Joaquin Valley College

Course Outline

Unit Objectives

Unit 1: Principles of the Writing Process

Upon completion of this unit of instruction the student will be able to:

- 1.1 Explain and utilize planning, shaping, drafting, revising, and editing skills
- 1.2 Identify steps of the Writing Process by reading and analyzing literary examples
- 1.3 Utilize planning and shaping in writing
- 1.4 Demonstrate pre-writing techniques
- 1.5 Apply revising strategies to improve his/her own writing
- 1.6 Work in collaboration with peers in the revision process
- 1.7 Use electronic resources to revise and develop writing

Unit 2: Elements of a Complete, Coherent Essay

Upon completion of this unit of instruction the student will be able to:

- 2.1 Identify and utilize basic and advanced essay formats
- 2.2 Create effective introductions and conclusions
- 2.3 Construct accurate and thoughtful thesis statements and topic sentences
- 2.4 Create unity and coherence by using transitional techniques and phrases

Unit 3: Critical Reasoning and Analytical Reading

Upon completion of this unit of instruction the student will be able to:

- 3.1 Identify the need for planning, flexibility, and metacognition in the thinking process
- 3.2 Employ close reading techniques to discuss and evaluate various literary examples
- 3.3 Identify the differences between verbal and written communication and use these skills to present professional writing
- 3.4 Use analytical skills to connect written and verbal communication
- 3.5 Analyze and evaluate various rhetorical modes of communication
- 3.6 Apply critical analysis to personal and professional writing
- 3.7 Analyze and evaluate various writing with peers
- 3.8 Analyze electronic research sources for quality

Unit 4: Writing Skills

Upon completion of this unit of instruction the student will be able to:

- 4.1 Demonstrate correct use of grammar, spelling, punctuation, sentence structure and word choice in college level writing
- 4.2 Demonstrate effective use of description and detail

San Joaquin Valley College

Course Outline

- 4.3 Write in a variety of rhetorical modes, such as narration, description, definition, argument, persuasion, exemplification, cause-effect, comparison/contrast, classification, and analysis
- 4.4 Edit and proofread personal writing with peers
- 4.5 Practice enough writing to meet end goal of 6000 words by the end of course

Unit 5: Academic Research and APA Documentation Skills

Upon completion of this unit of instruction the student will be able to:

- 5.1 Apply APA format to pieces of personal writing
- 5.2 Practice proper APA documentation of sources
- 5.3 Recognize and avoid plagiarism
- 5.4 Demonstrate information literacy by identifying appropriate sources for inclusion in academic research
- 5.5 Locate and identify appropriate sources for inclusion in academic research
- 5.6 Use research techniques to find information through electronic and print resources
- 5.7 Use research sources to support and defend ideas

San Joaquin Valley College

Course Outline

Instructional Strategies and Methods for Assessing Student Learning Outcomes:

1. Critical Thinking Tasks and Assignments:

Through discussions, individual and group presentations, written assignments, and research papers and projects, students will demonstrate critical thinking skills and problem solving abilities that meet the standards outlined by the Student Learning Outcomes for this course. Each instructor must maintain an instructor portfolio with examples of all required assignments and activities.

2. Required Reading, Writing, Projects, and Outside of Class Assignments:

Each instructor must maintain a listing of all homework assignments including reading assignments, writing assignments, and projects.

3. Methods to Measure Achievement of Student Learning Outcomes:

Students in this course will be graded in the following categories:

a) Writing Assignments:

- Written homework
- Research papers
- Term or other papers

b) Computational or Non-Computational Problem Solving Demonstrations:

- Exams
- Homework problems
- Quizzes

c) Skill Demonstration:

- Individual and group presentations
- Performance exams
- Skill competencies
- Case studies

d) Objective Examinations:

- Multiple choice
- Matching items
- Fill-in-the-blanks
- Essays
- Short answer
- True or false

The evaluation of student performance is based on the scores received on quizzes, homework assignments, projects, skill performance, and objective examinations. All scores earned are converted to a percentage of the total scores possible within each course. The final grade in each course is determined by the percent ranges converted to the letter grade shown in the chart below.

90	-	100%	=	A
80	-	89%	=	B
70	-	79%	=	C
65	-	69%	=	D
Below		65%	=	F

San Joaquin Valley College

Course Outline

Division: Business, Health, & Technical Studies
Program: General Education

Course Number: MTH 121
Course Name: College Algebra – Part A
Total Semester Units: 3.0
Total Hours: 45
Theory/Lecture Hours: 45
Application/Lab Hours: 0
Externship/Clinical Hours: 0

Course Description:

This course integrates technology with mathematics through the use of online learning resources, and covers the fundamentals and terminology of algebra. Topics include real numbers, complex numbers, order of operations, ratios/proportions, single and multiple step linear equations and inequalities, use of formulas, algebraic expressions, polynomials, systems of equations, graphing and quadratic equations. Students will utilize the metric and U.S. standard systems, and scientific notation. The fundamentals and terminology of geometry, including geometric shapes and the Pythagorean Theorem, will be provided. This course offers hands-on applications that allow students to relate to and to apply concepts to their field of study.

Recommended Prerequisites: Completion of the Study Plan created through self-assessment in MyMathLab in the Student Center

Course Learning Outcomes

Upon completion of this course, the student will be able to:

1. Interpret mathematical and algebraic terminology and simplify algebraic expressions
2. Solve algebraic equations and formulas
3. Solve and graph linear equations and inequalities
4. Evaluate and factor polynomials
5. Solve systems of equations with two and three variables using multiple methods
6. Apply appropriate algebraic methods and operations to solve problems commonly associated with the student's profession

Grade Item Weights

- 25% Quizzes
- 35% Projects/Homework
- 40% Exams

San Joaquin Valley College

Course Outline

Unit Objectives

Unit 1: Terminology

Upon completion of this unit of instruction the student will be able to:

- 1.1 Define the properties of real numbers - the set and subsets of real numbers:
 - a. Whole numbers
 - b. Integers
 - c. Natural numbers
 - d. Rational numbers
 - e. Irrational numbers
- 1.2 Define algebraic expressions, equations, terms, and coefficients
- 1.3 Apply methods of translating algebraic expressions and equations
- 1.4 Combine like terms
- 1.5 Perform operations involving bases and integer exponents
- 1.6 Define terminology associated with geometry to determine perimeter, area, surface area, circumference and volume of geometric shapes
- 1.7 Convert between standard form and scientific notation

Unit 2: Equations, Formulas, and Expressions

Upon completion of this unit of instruction the student will be able to:

- 2.1 Utilize substitution to evaluate equations and expressions
- 2.2 Utilize the addition and multiplication principles to solve single and multiple step linear equations and formulas
- 2.3 Determine if an equation has no solution or is an identity
- 2.4 Solve absolute value equations
- 2.5 Use formulas to determine perimeter, area, surface area, circumference and volume of geometric shapes

Unit 3: Graphing

Upon completion of this unit of instruction the student will be able to:

- 3.1 Recognize and interpret the slope, x-intercept, and y-intercept of a line
- 3.2 Use standard, slope-intercept, and point-slope equations of a line to identify and to solve for slope, x- and y-intercepts of linear equations
- 3.3 Use the graph of a line to identify its slope, x- and y-intercepts and/or to determine the equation of the line
- 3.4 Recognize horizontal and vertical lines and their slopes
- 3.5 Graph a linear equation and linear inequalities

San Joaquin Valley College

Course Outline

Unit 4: Polynomials

Upon completion of this unit of instruction the student will be able to:

- 4.1 Add, subtract, multiply and divide polynomials
- 4.2 Find the greatest common factor of a polynomial
- 4.3 Identify the components and differentiate the features of various polynomials
- 4.4 Use various methods to factor polynomials

Unit 5: Systems of Equations with Two and Three Variables

Upon completion of this unit of instruction the student will be able to:

- 5.1 Classify systems of linear equations
- 5.2 Solve systems of linear equations by graphing, substitution, and elimination

Unit 6: Mathematical Models

Upon completion of this unit of instruction the student will be able to:

- 6.1 Utilize concrete, situational data to create abstract mathematical models related to the real world
- 6.2 Evaluate ratios/proportions and perform dimensional analysis to carry out unit conversions and solve applied problems
- 6.3 Use basic geometry to solve design problems
- 6.4 Relate mathematical functions to career situations

San Joaquin Valley College

Course Outline

Instructional Strategies and Methods for Assessing Student Learning Outcomes:

1. Critical Thinking Tasks and Assignments:

Through discussions, individual and group presentations, written assignments, and research papers and projects, students will demonstrate critical thinking skills and problem solving abilities that meet the standards outlined by the Student Learning Outcomes for this course. Each instructor must maintain an instructor portfolio with examples of all required assignments and activities.

2. Required Reading, Writing, Projects, and Outside of Class Assignments:

Each instructor must maintain a listing of all homework assignments including reading assignments, writing assignments, and projects.

3. Methods to Measure Achievement of Student Learning Outcomes:

Students in this course will be graded in the following categories:

a) Writing Assignments:

- Written homework
- Research papers
- Term or other papers

b) Computational or Non-Computational Problem Solving Demonstrations:

- Exams
- Homework problems
- Quizzes

c) Skill Demonstration:

- Individual and group presentations
- Performance exams
- Skill competencies
- Case studies

d) Objective Examinations:

- Multiple choice
- Matching items
- Fill-in-the-blanks
- Essays
- Short answer
- True or false

The evaluation of student performance is based on the scores received on quizzes, homework assignments, projects, skill performance, and objective examinations. All scores earned are converted to a percentage of the total scores possible within each course. The final grade in each course is determined by the percent ranges converted to the letter grade shown in the chart below.

90	-	100%	=	A
80	-	89%	=	B
70	-	79%	=	C
65	-	69%	=	D
Below		65%	=	F

San Joaquin Valley College

Course Outline

Division: Business, Health, & Technical Studies
Program: General Education

Course Number: MTH 122
Course Name: College Algebra – Part B
Total Semester Units: 3.0
Total Hours: 45
Theory/Lecture Hours: 45
Application/Lab Hours: 0
Externship/Clinical Hours: 0

Course Description:

This course integrates technology with mathematics through the use of online learning resources, and covers the fundamentals and terminology of algebra. Topics include use of formulas, algebraic expressions, polynomials, systems of equations, exponential and logarithmic expressions and quadratic equations. Students will utilize rational and radical expressions, conics and functions. This course offers hands-on applications that allow students to relate to and to apply concepts to their field of study.

Course Learning Outcomes

Upon completion of this course, the student will be able to:

1. Interpret mathematical and algebraic terminology
2. Solve algebraic equations and formulas, and simplify algebraic expressions
3. Evaluate and factor polynomials
4. Solve problems involving exponential and logarithmic expressions
5. Simplify rational and radical expressions
6. Use the rectangular coordinate system to graph and identify conics
7. Solve and evaluate functions
8. Apply appropriate algebraic methods and operations to solve problems commonly associated with the student's profession

Grade Item Weights

- 25% Quizzes
- 42% Projects/Homework
- 33% Exams

San Joaquin Valley College

Course Outline

Unit Objectives

Unit 1: Terminology

Upon completion of this unit of instruction the student will be able to:

- 1.1 Define the properties of real numbers - the set and subsets of real numbers:
 - a. Whole numbers
 - b. Integers
 - c. Natural numbers
 - d. Rational numbers
 - e. Irrational numbers
- 1.2 Define properties of complex numbers
- 1.3 Define algebraic expressions, equations, terms, and coefficients
- 1.4 Apply methods of translating algebraic expressions and equations

Unit 2: Equations, Formulas, and Expressions

Upon completion of this unit of instruction the student will be able to:

- 2.1 Utilize the addition and multiplication principles to solve single and multiple step linear equations and formulas
- 2.2 Determine if an equation has no solution or is an identity
- 2.3 Utilize substitution to evaluate equations and expressions
- 2.4 Combine like terms
- 2.5 Perform operations involving bases and integer exponents
- 2.6 Solve absolute value equations

Unit 3: Polynomials

Upon completion of this unit of instruction the student will be able to:

- 3.1 Add, subtract, multiply and divide polynomials
- 3.2 Find the greatest common factor of a polynomial
- 3.3 Classify polynomials into monomials, binomials, trinomials
- 3.4 Use various methods to factor polynomials
- 3.5 Identify and factor special products of perfect trinomial squares and differences of squares
- 3.6 Solve quadratic equations by factoring, completing the square, and using the quadratic formula

San Joaquin Valley College

Course Outline

Unit 4: Logarithms

Upon completion of this unit of instruction the student will be able to:

- 4.1 Simplify logarithmic expressions by using the properties of logarithms
- 4.2 Convert between logarithmic form and exponential form

Unit 5: Rational and Radical Expressions

Upon completion of this unit of instruction the student will be able to:

- 5.1 Find equivalent rational expressions
- 5.2 Simplify complex fractions
- 5.3 Multiply, divide, add, and subtract rational and radical expressions
- 5.4 Convert between radical and exponential form
- 5.5 Use the properties of exponents to simplify rational exponents
- 5.6 Simplify radical expressions

Unit 6: Conics

Upon completion of this unit of instruction the student will be able to:

- 6.1 Define and graph a circle, ellipse, hyperbola, and parabola
- 6.2 Identify the special points and lines for a circle, ellipse, hyperbola, and parabola
- 6.3 Derive appropriate equations of a circle, ellipse, hyperbola, and parabola when given the special points

Unit 7: Functions

Upon completion of this unit of instruction the student will be able to:

- 7.1 Determine if an equation is a function
- 7.2 Identify domain and range of functions
- 7.3 Graph functions using a table of solutions

San Joaquin Valley College

Course Outline

Instructional Strategies and Methods for Assessing Student Learning Outcomes:

1. Critical Thinking Tasks and Assignments:

Through discussions, individual and group presentations, written assignments, and research papers and projects, students will demonstrate critical thinking skills and problem solving abilities that meet the standards outlined by the Student Learning Outcomes for this course. Each instructor must maintain an instructor portfolio with examples of all required assignments and activities.

2. Required Reading, Writing, Projects, and Outside of Class Assignments:

Each instructor must maintain a listing of all homework assignments including reading assignments, writing assignments, and projects.

3. Methods to Measure Achievement of Student Learning Outcomes:

Students in this course will be graded in the following categories:

a) Writing Assignments:

- Written homework
- Research papers
- Term or other papers

b) Computational or Non-Computational Problem Solving Demonstrations:

- Exams
- Homework problems
- Quizzes

c) Skill Demonstration:

- Individual and group presentations
- Performance exams
- Skill competencies
- Case studies

d) Objective Examinations:

- Multiple choice
- Matching items
- Fill-in-the-blanks
- Essays
- Short answer
- True or false

The evaluation of student performance is based on the scores received on quizzes, homework assignments, projects, skill performance, and objective examinations. All scores earned are converted to a percentage of the total scores possible within each course. The final grade in each course is determined by the percent ranges converted to the letter grade shown in the chart below.

90	-	100%	=	A
80	-	89%	=	B
70	-	79%	=	C
65	-	69%	=	D
Below		65%	=	F

San Joaquin Valley College

Course Outline

Division: Business, Health, & Technical Studies
Program: General Education

Course Number: NSC 1
Course Name: Introduction to the Natural Sciences
Total Semester Units: 3.0
Total Hours: 45
Theory/Lecture Hours: 45
Application/Lab Hours: 0
Externship/Clinical Hours: 0

Course Description:

This course presents an overview of the basic concepts of the natural sciences, emphasizing biology, chemistry, physical, earth and space science. These concepts are taught both as a technical foundation and from a historical perspective. The subject matter is integrated into lecture discussions covering the environment, ecology, and the relevance of natural science to human affairs. Subjects discussed include current and relevant social, scientific and economic issues. Special projects and activities may be required.

Course Learning Outcomes

Upon completion of this course, the student will be able to:

1. Demonstrate the basic principles of biology and relate them to practical applications
2. Identify the essential roles and properties of chemistry
3. Describe the general rules of physics and apply them to the world around us
4. Demonstrate knowledge of astronomy when examining the organization and composition of the universe
5. Identify the basic principles of geology and environmental science, as well as how they apply to the world
6. Utilize the scientific method and evaluate conclusions drawn from scientific data

Grade Item Weights

- 17% Quizzes
- 50% Projects/Homework
- 33% Exams

San Joaquin Valley College

Course Outline

Unit Objectives

Unit 1: Introduction to Scientific Literacy, Method & Philosophy

Upon completion of this unit of instruction the student will be able to:

- 1.1 Define science, explain the scientific method, identify the common branches of the natural sciences, and relate the importance of ethics in scientific disciplines
- 1.2 Relate the major historical developments in natural science, and explain the effects on society

Unit 2: Chemistry Fundamentals

Upon completion of this unit of instruction the student will be able to:

- 2.1 Explain the fundamental concepts of chemistry including:
 - 2.1.1 Atomic structure
 - 2.1.2 Periodic table and properties of matter
 - 2.1.3 Chemical bonding and molecular structure
 - 2.1.4 Acid/base
 - 2.1.5 Oxidation – Reduction
 - 2.1.6 Radioactivity
 - 2.1.7 Organic and biochemistry

Unit 3: Classical Physics

Upon completion of this unit of instruction the student will be able to:

- 3.1 Describe the basic concepts of classical physics, including mechanics, energy, work, power, heat, sound, magnetism, gravity, and light

Unit 4: Astronomy and Cosmology

Upon completion of this unit of instruction the student will be able to:

- 4.1 Describe the theories explaining the formation of stars and planets, and the life of a star
- 4.2 Explain the concept of the Big Bang Theory, the formation of matter, and the methods used by scientists to study these theories

Unit 5: Biological, Ecology and Environment Science

Upon completion of this unit of instruction the student will be able to:

- 5.1 Explain the basic principles of biology including:
 - 5.1.1 Cell structure and physiology
 - 5.1.2 Cell diversity and specificity
 - 5.1.3 Classification of organisms and bio-diversity
 - 5.1.4 Growth and reproduction
 - 5.1.5 Structure and function of DNA and RNA

San Joaquin Valley College

Course Outline

- 5.1.6 Microbiology and disease
- 5.2 Discuss the theories relating to the development and evolution of life on earth
- 5.3 Define and explain the ecology of the earth including:
 - 5.3.1 Biomes
 - 5.3.2 Ecological balance
 - 5.3.3 Food cycles
 - 5.3.4 Biological competition
 - 5.3.5 Effects of natural and man-made changes to the environment
- 5.4 Relate importance of nutrition to a healthy lifestyle
- 5.5 Discuss function of protein, carbohydrates and lipids, including importance of vitamins and minerals

Unit 6: Earth Science

Upon completion of this unit of instruction the student will be able to:

- 6.1 Explain the basic geology of the earth including geologic evolution, water and the oceans, the continents and plate tectonics
- 6.2 Relate the application of natural sciences to modern technology, assessments of risks and benefits and the problems and potential problems of certain technology:
 - 6.2.1 Medicine and Human Health
 - 6.2.2 Genetic Engineering
 - 6.2.3 Energy
 - 6.2.4 War and Weapons
 - 6.2.5 Electronics & Computers
 - 6.2.6 Pollution
 - 6.2.7 Atmosphere
 - 6.2.8 Ozone Layer
 - 6.2.9 Greenhouse Effect
 - 6.2.10 Acid Rain

San Joaquin Valley College

Course Outline

Instructional Strategies and Methods for Assessing Student Learning Outcomes:

1. Critical Thinking Tasks and Assignments:

Through discussions, individual and group presentations, written assignments, and research papers and projects, students will demonstrate critical thinking skills and problem solving abilities that meet the standards outlined by the Student Learning Outcomes for this course. Each instructor must maintain an instructor portfolio with examples of all required assignments and activities.

2. Required Reading, Writing, Projects, and Outside of Class Assignments:

Each instructor must maintain a listing of all homework assignments including reading assignments, writing assignments, and projects.

3. Methods to Measure Achievement of Student Learning Outcomes:

Students in this course will be graded in the following categories:

a) Writing Assignments:

- Written homework
- Research papers
- Term or other papers

b) Computational or Non-Computational Problem Solving Demonstrations:

- Exams
- Homework problems
- Quizzes

c) Skill Demonstration:

- Individual and group presentations
- Performance exams
- Skill competencies
- Case studies

d) Objective Examinations:

- Multiple choice
- Matching items
- Fill-in-the-blanks
- Essays
- Short answer
- True or false

The evaluation of student performance is based on the scores received on quizzes, homework assignments, projects, skill performance, and objective examinations. All scores earned are converted to a percentage of the total scores possible within each course. The final grade in each course is determined by the percent ranges converted to the letter grade shown in the chart below.

90	-	100%	=	A
80	-	89%	=	B
70	-	79%	=	C
65	-	69%	=	D
Below		65%	=	F

San Joaquin Valley College

Course Outline

Division: Business, Health, & Technical Studies
Program: General Education

Course Number: PHIL 1C
Course Name: Ethics
Total Semester Units: 3.0
Total Hours: 45
Theory/Lecture Hours: 45
Application/Lab Hours: 0
Externship/Clinical Hours: 0

Course Description:

This course provides an introduction to the ethical problems and issues in modern society. Students will discuss current events related to ethical issues and participate in group discussions.

Course Learning Outcomes

Upon completion of this course, the student will be able to:

1. Discuss and explain how ethics and/or the lack of ethics impacts the individual and society
2. Assess and summarize the different theories of ethics
3. Contrast and compare the differences between personal and organizational ethics
4. Describe moral development
5. Develop awareness of the student's own Code of Ethics
6. Discuss contemporary ethical issues within society including abortion, capital punishment, cloning, euthanasia, war, sexuality, and animal testing
7. Evaluate and discuss ethical dilemmas commonly associated with the student's chosen profession

Grade Item Weights

- 17% Quizzes
- 50% Projects/Homework
- 33% Exams

San Joaquin Valley College

Course Outline

Unit Objectives

Unit 1: History and Development of Ethics and Morality

Upon completion of this unit of instruction the student will be able to:

- 1.1 Describe the historical, social, and cultural evolution of the study and theories of ethics and morality
- 1.2 Define ethics, morals, and values
- 1.3 Describe the stages of moral development
- 1.4 Inventory his/her personal belief system

Unit 2: Theories of Ethics and Morality

Upon completion of this unit of instruction the student will be able to:

- 2.1 Discuss both religious and secular ways of defining and looking at morality and ethics
- 2.2 Distinguish between consequentiality and nonconsequentialist theories of ethics, including ethical egoism, utilitarianism, and divine command theories
- 2.3 Differentiate the beliefs of major philosophers such as Aristotle, Immanuel Kant, and Sir William David Ross
- 2.4 Define various beliefs such as determinism, relativism, and absolutism
- 2.5 Identify the elements of justice, reward, and punishment as they relate to ethics and morality
- 2.6 Discuss the various problems and criticism of ethical theories and what elements potentially could be used to create a workable moral system

Unit 3: Current Issues in Ethics and Morality

Upon completion of this unit of instruction the student will be able to:

- 3.1 Discuss the concept of legality vs. morality
- 3.2 Discuss the pro and con arguments of current societal issues such as abortion, capital punishment, euthanasia, war, lying, cheating, stealing, and variations in sexuality
- 3.3 Discuss the pro and con arguments of current professional ethical issues such as cloning, sexual harassment, the media, and the use of animals for experimentation.
- 3.4 Apply the theories of ethics to case studies and scenarios involving current events

San Joaquin Valley College

Course Outline

Instructional Strategies and Methods for Assessing Student Learning Outcomes:

1. Critical Thinking Tasks and Assignments:

Through discussions, individual and group presentations, written assignments, and research papers and projects, students will demonstrate critical thinking skills and problem solving abilities that meet the standards outlined by the Student Learning Outcomes for this course. Each instructor must maintain an instructor portfolio with examples of all required assignments and activities.

2. Required Reading, Writing, Projects, and Outside of Class Assignments:

Each instructor must maintain a listing of all homework assignments including reading assignments, writing assignments, and projects.

3. Methods to Measure Achievement of Student Learning Outcomes:

Students in this course will be graded in the following categories:

a) Writing Assignments:

- Written homework
- Research papers
- Term or other papers

b) Computational or Non-Computational Problem Solving Demonstrations:

- Exams
- Homework problems
- Quizzes

c) Skill Demonstration:

- Individual and group presentations
- Performance exams
- Skill competencies
- Case studies

d) Objective Examinations:

- Multiple choice
- Matching items
- Fill-in-the-blanks
- Essays
- Short answer
- True or false

The evaluation of student performance is based on the scores received on quizzes, homework assignments, projects, skill performance, and objective examinations. All scores earned are converted to a percentage of the total scores possible within each course. The final grade in each course is determined by the percent ranges converted to the letter grade shown in the chart below.

90	-	100%	=	A
80	-	89%	=	B
70	-	79%	=	C
65	-	69%	=	D
Below		65%	=	F

San Joaquin Valley College

Course Outline

Division: Business, Health, & Technical Studies
Program: General Education

Course Number: PSY 1
Course Name: General Psychology
Total Semester Units: 3.0
Total Hours: 45
Theory/Lecture Hours: 45
Application/Lab Hours: 0

Course Description:

This course covers the study of human behavior, moral development, and psychological theory as it applies to the individual, group, and community. Behavioral disorders and treatment, social perceptions, emotions and motivation, social influence, and group processes are topics included in this course.

Course Learning Outcomes

Upon completion of this course, the student will be able to:

1. Discuss the history and founders of the field of psychology as well as the major contributors to psychology and their theories
2. Discuss theories of behaviorism, cognition, psychoanalysis, and humanism
3. Evaluate and explain the biological basis of behavior and heredity and how they interact with the environment to influence behavior and development
4. Apply psychological concepts such as motivation, emotion, learning, and personality to areas commonly associated with the student's own professional goals

Grade Item Weights

- 17% Quizzes
- 50% Projects/Homework
- 33% Exams

San Joaquin Valley College

Course Outline

Unit Objectives

Unit 1: History of Psychology

Upon completion of this unit of instruction the student will be able to:

- 1.1 Recognize the founders of the field of psychology
- 1.2 Summarize the specialized fields within psychology

Unit 2: Biological Foundation

Upon completion of this unit of instruction the student will be able to:

- 2.1 Identify the specialized functions of the brain
- 2.2 Identify the sense organs and explain their functions
- 2.3 Summarize research on the effects of heredity and environment on human behavior

Unit 3: Psychological Theories

Upon completion of this unit of instruction the student will be able to:

- 3.1 Describe the principles and techniques of classical and operant conditioning
- 3.2 Explain the different theories of memory
- 3.3 Identify various theories of personality
- 3.4 Summarize various theories of emotion and motivation
- 3.5 Describe research into sleep, dreaming, and altered states

Unit 4: Developmental Psychology

Upon completion of this unit of instruction the student will be able to:

- 4.1 Discuss theoretical concepts of physical, cognitive, emotional, and moral development
- 4.2 Summarize major theories of socialization
- 4.3 Describe changes in development from infancy through adolescence and adulthood and into old age

Unit 5: Breakdown and Therapy

Upon completion of this unit of instruction the student will be able to:

- 5.1 Identify sources of stress and strategies for coping with stress
- 5.2 Distinguish between normalcy and abnormality
- 5.3 Identify behaviors classified as neurosis and those classified as psychosis
- 5.4 Describe substance abuse
- 5.5 Explain the difference in various forms of therapy, including psychoanalysis, behavioral, humanistic, group, organic

Unit 6: Psychological Testing and Research Methodology

Upon completion of this unit of instruction the student will be able to:

- 6.1 Identify different kinds of psychological testing such as personality and I.Q.
- 6.2 Explain different research methods
- 6.3 Define validity and reliability

San Joaquin Valley College

Course Outline

Instructional Strategies and Methods for Assessing Student Learning Outcomes:

1. Critical Thinking Tasks and Assignments:

Through discussions, individual and group presentations, written assignments, and research papers and projects, students will demonstrate critical thinking skills and problem solving abilities that meet the standards outlined by the Student Learning Outcomes for this course. Each instructor must maintain an instructor portfolio with examples of all required assignments and activities.

2. Required Reading, Writing, Projects, and Outside of Class Assignments:

Each instructor must maintain a listing of all homework assignments including reading assignments, writing assignments, and projects.

3. Methods to Measure Achievement of Student Learning Outcomes:

Students in this course will be graded in the following categories:

a) Writing Assignments:

- Written homework
- Research papers
- Term or other papers

b) Computational or Non-Computational Problem Solving Demonstrations:

- Exams
- Homework problems
- Quizzes

c) Skill Demonstration:

- Individual and group presentations
- Performance exams
- Skill competencies
- Case studies

d) Objective Examinations:

- Multiple choice
- Matching items
- Fill-in-the-blanks
- Essays
- Short answer
- True or false

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70	-	79%	=	C
65	-	69%	=	D
Below		65%	=	F

San Joaquin Valley College

Course Outline

Division: Business, Health, & Technical Studies
Program: General Education

Course Number: SOC 1
Course Name: Introduction to Sociology
Total Semester Units: 3.0
Total Hours: 45
Theory/Lecture Hours: 45
Application/Lab Hours: 0
Externship/Clinical Hours: 0

Course Description:

This course is a survey of social structure, theory, and its implications for individuals in a dynamic view of the environment. Cultures, family, organizations, groups, ethnic and political influences, and politics are the topics covered.

Course Learning Outcomes

Upon completion of this course, the student will be able to:

1. Discuss the concepts, theories, elements and perspectives of Sociology
2. Analyze the methods and results of social control, social structure, and stratification
3. Discuss the impact and process of socialization in connection with the student's own life
4. Explain the theories, elements, and characteristics of culture
5. Integrate the function and impact of media on personal and global culture
6. Relate sociological concepts to aspects commonly associated with everyday interaction with people and groups

Grade Item Weights

- 17% Quizzes
- 50% Projects/Homework
- 33% Exams

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Course Outline

Unit Objectives

Unit 1: Culture

Upon completion of this unit of instruction the student will be able to:

- 1.1 Define sociology
- 1.2 Summarize the major contributions of classical sociologists
- 1.3 Compare functionalist, conflict, interactionist, and feminist theory
- 1.4 Define and explain the characteristics of culture
- 1.5 Identify subcultures and counter cultures

Unit 2: Socialization

Upon completion of this unit of instruction the student will be able to:

- 2.1 Define the concept of self
- 2.2 Define socialization
- 2.3 Define and explain re-socialization
- 2.4 Explain and identify social interaction
- 2.5 Illustrate and identify the agents of socialization

Unit 3: Media

Upon completion of this unit of instruction the student will be able to:

- 3.1 Explain and identify the influence of mass media from the various sociological perspectives
- 3.2 Discuss and illustrate the role of audience
- 3.3 Identify the characteristics of the Global Media

Unit 4: Social Control and Stratification

Upon completion of this unit of instruction the student will be able to:

- 4.1 Define Social Control
- 4.2 Define Deviance
- 4.3 Explain systems of stratification: global, domestic, gender, and age
- 4.4 Identify and discuss social class and social mobility
- 4.5 Explain social inequality involving the relationship between prejudice and discrimination
- 4.6 Explain the effects of globalization in regards to social movement and social change

Unit 5: Social Structure, Groups, and Organizations

Upon completion of this unit of instruction the student will be able to:

- 5.1 Identify and explain the elements of social structure, groups, and organizations
- 5.2 Explain the importance of social institutions and social organization
- 5.3 Explain the functions and structures of the family
- 5.4 Discuss the basic elements of religion and various religious organizations
- 5.5 Discuss the effect of population growth on the global economy

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Course Outline

Instructional Strategies and Methods for Assessing Student Learning Outcomes:

1. Critical Thinking Tasks and Assignments:

Through discussions, individual and group presentations, written assignments, and research papers and projects, students will demonstrate critical thinking skills and problem solving abilities that meet the standards outlined by the Student Learning Outcomes for this course. Each instructor must maintain an instructor portfolio with examples of all required assignments and activities.

2. Required Reading, Writing, Projects, and Outside of Class Assignments:

Each instructor must maintain a listing of all homework assignments including reading assignments, writing assignments, and projects.

3. Methods to Measure Achievement of Student Learning Outcomes:

Students in this course will be graded in the following categories:

a) Writing Assignments:

- Written homework
- Research papers
- Term or other papers

b) Computational or Non-Computational Problem Solving Demonstrations:

- Exams
- Homework problems
- Quizzes

c) Skill Demonstration:

- Individual and group presentations
- Performance exams
- Skill competencies
- Case studies

d) Objective Examinations:

- Multiple choice
- Matching items
- Fill-in-the-blanks
- Essays
- Short answer
- True or false

The evaluation of student performance is based on the scores received on quizzes, homework assignments, projects, skill performance, and objective examinations. All scores earned are converted to a percentage of the total scores possible within each course. The final grade in each course is determined by the percent ranges converted to the letter grade shown in the chart below.

90	-	100%	=	A
80	-	89%	=	B
70	-	79%	=	C
65	-	69%	=	D
Below		65%	=	F