ILLINOIS VALLEY COMMUNITY COLLEGE

COURSE OUTLINE

DIVISION: Workforce Development

COURSE: IMT 1207; Pipefitting

Date: Spring 2014

Credit Hours: 2

Prerequisite(s): None

Delivery Method:		
	☒ **Lecture**	**1 Contact Hours (1 contact = 1 credit hour)**
	☐ **Seminar**	**0 Contact Hours (1 contact = 1 credit hour)**
	☒ **Lab**	**2 Contact Hours (2 contact = 1 credit hour)**
	☐ **Clinical**	**0 Contact Hours (3 contact = 1 credit hour)**
	☐ **Online**	
	☐ **Blended**	

Offered: ☐ **Fall** ☒ **Spring** ☐ **Summer**

IAI Equivalent –***Only for Transfer Courses***-go to *http://www.itransfer.org*:

CATALOG DESCRIPTION:
This course will provide the student with the knowledge and practical applications necessary for the installation and maintenance of building and industrial piping systems. Piping systems and piping components applied to industrial situations will be analyzed.

GENERAL EDUCATION GOALS ADDRESSED

[See the last page of this form for more information.]

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

[Choose those goals that apply to this course.]

☒ To apply analytical and problem solving skills to personal, social and professional issues and situations.
☒ To communicate orally and in writing, socially and interpersonally.
☐ To develop an awareness of the contributions made to civilization by the diverse cultures of the world.
☐ To understand and use contemporary technology effectively and to understand its impact on the individual and society.
☒ To work and study effectively both individually and in collaboration with others.
☐ To understand what it means to act ethically and responsibly as an individual in one's career and as a member of society.
☐ To develop and maintain a healthy lifestyle physically, mentally, and spiritually.
☒ To appreciate the ongoing values of learning, self-improvement, and career planning.

EXPECTED LEARNING OUTCOMES AND RELATED COMPETENCIES:

[Outcomes related to course specific goals.]

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

1.0 Be able to identify various types of industrial pipe, pipe fittings, pipe hangers, and typical valves used in most industrial applications.
2.0 Be able to acquire the knowledge and skills needed to maintain piping systems, as well as selecting proper methods, sizes, connections, materials, and installation procedures.
3.0 Become familiar with the basics of piping mathematics.

COURSE TOPICS AND CONTENT REQUIREMENTS:

I. Review of Basic Science
   A. Matter -- gases, liquids, and solids
   B. Pressure of liquids
   C. How liquids transmit pressure
   D. Density and specific weight
II. Water Treatment
   A. Sources of water supply
   B. Types of wells
   C. Treatment of raw water/filtration
III. Water Mains & Services
   A. Water distribution systems – types
   B. Installation and joining of pipe
IV. Pipe, Flanges, Pipe Fittings, and Pipe Hangers
   A. Types
   B. Properties of pipe/piping mathematics
V. Piping Symbols & Piping Diagrams
   A. Common symbols for pipe fittings
   B. Isometric, oblique, & 3 vie diagrams

VI. Building Water Supply Systems
    A. Basic building water supply system
    B. Mains, major, & minor, distribution lines
VII. Cross Connections
    A. Definition – situations
    B. Corrective measures
VIII. Valves
    A. Types
    B. Functions
IX. Pumps
    A. Types
    B. Functions
X. Natural Gas Installations
    A. Types
    B. Installation & plumbing of gas systems
XI. LP Gas Systems
    A. Definition -- primary uses
    B. Safety -- relief valves & regulators
XII. Sizing and Venting Gas Systems
    A. Rule of thumb sizing -- pluses & minuses
    B. Types/lengths and pitches

INSTRUCTIONAL METHODS:
Lecture
Demonstration
Multi-media

INSTRUCTIONAL MATERIALS:
Plumbing Design and Installation Ripka, American Technical Publishing 2006
Workbook

STUDENT REQUIREMENTS AND METHODS OF EVALUATION:
Students evaluated on:
    exams
    quizzes
    homework
    attendance

OTHER REFERENCES
Plumbing, L.V. Ripka, American Technology Publishers

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Course Competency/Assessment Methods Matrix

IMT 1207; Pipefitting	**Assessment Options**																														
For each competency/outcome place an "X" below the method of assessment to be used.	**Assessment of Student Learning**	Article Review	Case Studies	Group Projects	Lab Work	Oral Presentations	Pre-Post Tests	Quizzes	Written Exams	Artifact Self Reflection of Growth	Capstone Projects	Comprehensive Written Exit Exam	Course Embedded Questions	Multi-Media Projects	Observation	Writing Samples	Portfolio Evaluation	Real World Projects	Reflective Journals	Applied Application (skills) Test	Oral Exit Interviews	Accreditation Reviews/Reports	Advisory Council Feedback	Employer Surveys	Graduate Surveys	Internship/Practicum /Site Supervisor Evaluation	Licensing Exam	In Class Feedback	Simulation	Interview	Written Report	Assignment
Assessment Measures – Are direct or indirect as indicated. List competencies/outcomes below.	**Direct/ Indirect**	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	I	I	I	I	D	D					
1.0 Be able to identify various types of industrial pipe, pipe fittings, pipe hangers, and typical valves used in most industrial applications.				X	X			X							X																
2.0 Be able to acquire the knowledge and skills needed to maintain piping systems, as well as selecting proper methods, sizes, connections, materials, and installation procedures.				X	X			X							X																
3.0 Become familiar with the basics of piping mathematics.				X	X			X							X																