FRESNO PACIFIC UNIVERSITY

Course Title: Linear Equations
Grades 6-9
AIMS Publication: *Looking at Lines*
Instructor's Name: Richard Thiessen, AIMS Education Foundation
Course Number: MAT 942
Number of Credit Units: 3 semester units

Course Content/Description:

Learn how to use engaging hands-on activities within the context of real-world situations to help students develop an understanding of linear function concepts. Through measuring and counting students discover patterns and relationships that they analyze, generalize, represent, and describe with tables, graphs, and rules that are expressed in words and with equations.

Primary Learning Outcomes

Students will:

1. Participate in opportunities for implementation and sustained use of hands-on experiences in mathematics in a classroom setting
2. Engage in reflective practice through the use of instructional planning, focused questions, and reflective responses
3. Make connections for conceptual understanding by showing alignment of instructional experiences with national reform documents and state content standards for mathematics
4. Develop positive attitudes and confidence in teaching and learning
5. Expand their knowledge base of mathematics education
6. Will make connections to professional literature regarding content, theory and practice
7. Will identify State or National Standards that apply to the selected AIMS activities by aligning learning goals with State or National Content Standards

Course Materials

AIMS Book – *Looking at Lines*
Manipulatives for one class to be used with lessons from text
1 Reflect /View
15 Mirrors (3 in. x 5in.)

An Overview of AIMS (online- PDFs; **bitly.com/AIMSpdfs**)
with required reading and application of ideas from the following:
A Model of Learning
The Skills for Thinking

(If Internet is not available to download the pdfs, AIMS can mail copies of these pages. Please email spscourses@AIMSedu.org or call 1-888-733-2467 ext. 8112 to request copies.)

Focus questions and guidelines for responses based on understanding and application of materials and ideas.

Overall plan for Implementation
Summary of Alignment with State Content Standards
Application of the Model of Learning
Application of Thinking Skills and Alignment with Standards and Learning Goals
Reflective Response and Focus Questions
Integrated Curriculum Form
Professional Growth and Reflection: A Response to Articles and Experience

Course Requirements/Schedule of Topics and Assignments

1. Students will read completely the related ***AIMS*** publication, ***Looking at Lines***.
2. Students will read the selected articles in **An Overview of AIMS** (online- PDFs; **bitly.com/AIMSpdfs**)
   with required reading and application of ideas from the following:
   A Model of Learning
   The Skills for Thinking
   (If Internet is not available to download the pdfs, AIMS can mail copies of these pages. Please email spscourses@AIMSedu.org or call 1-888-733-2467 ext. 8112 to request copies.)
3. Read the following articles in ***Looking for Lines*** prior to using any of the activities in the classroom:
   Looking at Lines, Interesting Objects and Linear Functions, pages V-VII
   Looking Back, pages VIII-IX
   Algebraic Thinking in the Context of Linear Functions, pages 1-2
   Helping Students Gain Understanding through Investigations, pages 3-9
4. Students will design a plan for implementation of ten (10) experiences from ***Looking at Lines*** including a summary of and rationale for the selection of ***AIMS*** lessons.
5. Students will choose one lesson from ***Looking at Lines*** and describe how it addresses the four learning environments of the **Model of Learning** and the **Model of Functions**, see pg V in L*ooking at Lines*.
6. Students will implement ten (10) lessons in the classroom with students over a three to four week period.
7. Prior to teaching each lesson, students will apply the ***Skills for Thinking*** to the design of tasks and discussion questions reflecting important concepts, skills and processes integral to each lesson. Students will record these on pages labeled **Applying Thinking Skills**. Students will also record the Learning Goal and appropriate State Standards on pages labeled Applying Thinking Skills.
8. After each lesson, students will reflect upon their teaching by responding to the Reflective Response focus questions.

9. Show summary of alignment of learning goals with **State Content Standards**.
   Content Standards for each state may be found at this Web-site address:
   US Department of Education has links to the state department of education for each state.
   bit.ly/hj77dh
10. Complete a **Professional Growth and Reflection** form describing how the selected articles (see number 2 above) and the teaching experience impacted you and your teaching.

Method of Assessment:

Provide evidence of the design, implementation, evaluation and reflection of the collective experiences by returning the completed assignments.

Unless otherwise indicated, students successfully completing this course will earn a Credit/No credit grade or where a letter grade is requested in writing, a letter grade of B will be issued. In order to earn a letter grade of A, additional work beyond what is described will be required. (See Requirements for an A.)

The discernment between an A or a B is at the discretion of the instructor of record based on the quality of the evidence submitted.

Additional requirement for an earned letter grade of A

Prepare a scoring rubric for assessing student work. Submit five examples of scored student work together with a written analysis of their work for each of two activities: Stacking Cups (p. 156) and a second activity of your choice.

University Policy on Plagiarism

All people participating in the educational process at Fresno Pacific University are expected to pursue honesty and integrity in all aspects of their academic work. Academic dishonesty, including plagiarism, will be handled according to the procedures set forth in the Fresno Pacific University Catalogue.