

COCONINO COMMUNITY COLLEGE

COURSE OUTLINE

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Effective Term: Fall 2020

Date: January 22, 2019
Date: January 24, 2020

A. **Identification:**

1. Subject Area: Teaching Science Math (TSM)
2. Course: 102
3. Course Title: STEP 2: Inquiry Based Lesson Design in Mathematics and Science
4. Credit Hrs: 1
5. Catalog Description: This is a lab-based course for prospective secondary math/science teachers where students continue to explore the teaching profession through observations and designing and teaching science or mathematics lessons for K-12 schools. One lecture. Letter grade only. Prerequisite: TSM 101.

B. **Course Goals:**

To further prepare students for university secondary education programs in science or mathematics, students continue to explore the teaching profession through observations and teaching science and mathematics lessons in middle school classrooms. Under the guidance of a Master Teacher students will observe a middle school classroom and plan and teach multiple inquiry-based mathematics or science lessons that implement technology and emphasize assessment of student learning.

C. **Course Outcomes:** Students will be able to:

1. Implement teaching strategies that are effective at achieving instructional equity in the middle school environment.
2. Design and teach lessons that incorporate the use of technology.
3. Implement various questioning strategies to elicit feedback.
4. Evaluate student acquisition of knowledge through the use and analysis of formative and summative assessments.
5. Reflect on instructional practices and impact on student learning.
6. Implement and reflect upon safe classroom practices.
7. Demonstrate classroom management strategies that assist in classroom instruction.

D: **Course Outcomes Assessment** will include:

Lesson plans, teaching evaluation, teaching reflections, observation reflections, completion of in-class inquiry-based learning activities.

E. **Course Content:**

Will include:

1. Course Technology Tools
 - a. Data collection and analysis
 - b. Graphing calculators or other data collection/analysis tools
 - c. Excel
2. Inquiry
 - a. How students learn
 - b. Active Engagement
 - c. Productive discussions
 - i. Probing questions
 - ii. Socratic questioning
 - iii. Think-pair-share
3. Equity
 - a. Teacher moves
 - b. Equitable instruction
 - c. Special needs
4. Lesson Design
 - a. Objectives
 - b. Instructional Strategies
 - c. Formative/Summative Assessment
 - d. Essential questions
 - e. Classroom management
 - f. Organizational structures
5. Reflective Practice
 - a. Impact on student learning
6. State/National Standards
 - a. Math/Science Content Standards
 - b. Standards of Mathematical Practice
 - c. Science and Engineering Practices