TOHONO O'ODHAM COMMUNITY COLLEGE

Syllabus: ECE 124 Math and Science for Young Children

Course Information	
Course Prefix/Number: ECE 124 Semester: Fall 2017 Class Days/Times: Tuesdays – 9:00 - 11:00 Field trips to be determined	Credit Hours: 3 Course Title: Math and Science for Young Children Location: Pascua Yaqui Education Center Room: 243

Instructor Information: Name: Patty Todd	Phone/Voice Mail: 520-623-6037 E-mail: ptodd@gmail.com Office location: Room 243 Office hours: 11:00 - 11:30

Course Description:

ECE 124 includes exploring the theories behind, and methodologies for, teaching math and science concepts to young children, from birth through age 8. TOCC students will engage in hands-on activities that they can replicate with their own students, and will create culturally-relevant activities that promote children's cognitive development. The course also provides strategies for observing and documenting children's progress in the content areas of math and science.

Course Outline:

1. **Central concepts in math and science**
2. **Exploring science experiments and math activities for young children**
3. **Creating culturally-relevant math and science activities for young children**
4. **Observing and assessing the progress of young children in the content areas of math and science**
5. **Integrating math and science into other curricula areas and writing lesson plans**
6. **Increasing parent and community involvement in math and science for young children**

Course Objectives:

During this course students will:
Create culturally-relevant math and science activities for young children;
Identify their objectives for their activities and articulate what they want the children to learn;
Observe and document children's exploration of math and science activities;
Integrate math and science activities into their lesson plans that are specific to their program's curricula.

Student Learning Outcomes:

After completion of the course students will be able to:

1. **Identify and discuss how children acquire knowledge using the central concepts in math and science, including understandings specific to the Yoeme or Tohono O'odham culture.**
2. **Demonstrate methods of communicating the scientific process to children and fellow students;**
3. **Assess activities and evaluate the child's acquisition of the concepts presented, using formal and informal assessment tools;**
4. **Demonstrate the integration of culturally-relevant science and math activities into at least one other content area;**
5. **Demonstrate the use of developmentally appropriate practices, approaches, strategies, and tools through lesson plans and learning centers;**
6. **Discuss appropriate methods used to encourage the interest and participation of parents, family and community in math and science activities.**

Course Structure:

1. **Students will engage in experiments and activities that can be replicated with young children related to teaching specific concepts of math and science.**
2. **Students will use assessment tools specific to their programs to evaluate the children's progress in the content areas of math and science.**
3. **Students will create culturally-relevant math and science activities which they will implement with their own program students; they will document their observations of the young children engaging in these activities.**
4. **Students will make formal class presentations on these activities and will include a summary of the observations they made with their program students.**
5. **Students will work in small groups to design plans for increasing parent and community involvement in math and science activities.**
6. **Students will participate in field trips that promote teaching math and science concepts to young children.**

Texts and Materials: *(list text(s), and materials students will need)*
The Young Child and Mathematics, 2nd edition. Juanita V. Copley

Evaluation and Grading & Assignments:

Policies and expectations-

Regular attendance is expected. If you will be absent, you must call me to receive an excused absence. Makeup assignments for misses classes may be assigned.

Students will be evaluated on their ability to:

1. **Identify and discuss how children acquire knowledge using the central concepts in math and science, including understandings specific to the Yoeme or Tohono O'odham culture.**
2. **Demonstrate methods of communicating the scientific process to children and fellow students;**
3. **Assess activities and evaluate the child's acquisition of the concepts presented, using formal and informal assessment tools;**
4. **Demonstrate the integration of culturally-relevant science and math activities into at least one other content area;**
5. **Demonstrate the use of developmentally appropriate practices, approaches, strategies, and tools through lesson plans and learning centers;**
6. **Discuss appropriate methods used to encourage the interest and participation of parents, family and community in math and science activities.**

Grading will be based on completion of all assignments. A rubric will be used to evaluate student presentations. Frequent absences may result in a student being withdrawn from the course.

Assignments:
(see attached document)

DISCLAIMER: This syllabus is designed to evolve and change throughout the semester based on class progress and interests. You will be notified of any changes as they occur.

***Himdag* Cultural Component:**

Students will discuss how the content areas for math and science can best be taught within the framework of Tohono O'odham and/or Yoeme traditional beliefs about these content areas. Activities created by students will be culturally-relevant and will include Tohono O'odham and/or Yoeme vocabulary.