University Learning Outcome 11 – Social Sciences
STEM-ED 210 Knowing and Learning Mathematics and Science

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<th>Foundation ULO 11 Criteria</th>
<th>Course Learning Outcomes “By the end of this course, each student should be able to...”</th>
<th>Assessment Method: Evidence of Student Learning</th>
<th>Planned Teaching &amp; Learning Activities/Pedagogy</th>
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| Understanding of individuals as members of a particular culture and/or community | • Use the clinical interview method to make sense of the variations between how people reason about topics in mathematics or science.  
  • Articulate what it means to know and learn relative to cognitive structures and describe how what people know changes and develops according to their culture and society, personal knowledge, and understanding.  
  • Describe various paradigms for evaluating science and mathematics understanding | • Quizzes/exams  
  • In-class discussions  
  • Report and analysis of clinical interviews  
  • Final project | • Short lectures  
  • Class discussions  
  • Small-group work |
| Understanding of historical and/or cultural forces | • Describe the links between knowing and developing in learning theory and the content and evolution of scientific ideas.  
  • Express informed opinions on current issues and tensions in education, especially as they relate to mathematics and science instruction. | • Quizzes/exams  
  • In-class discussions  
  • Written report | • Short lectures  
  • Class discussions |
| Reasoning, inquiry, and problem-solving | • Articulate various standards for knowing mathematics and science and articulate the implications of these standards for assessment, especially standardized assessment  
  • Explore the affordances offered by various technologies in supporting knowing and learning in mathematics and science. | • Quizzes/exams  
  • In-class discussions  
  • Analysis of clinical interviews | • Class discussions  
  • Small-group work |
| Responsibility, personal reflection | • Explore the implications of deficit models of learning on issues of equitable instructions and learning environments. | • In-class discussions | • Class discussions  
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