

COURSE OUTLINE

Module Topic	Topics/Materials	Assignments
M1 – The Nature of Science and Science Education	<ul style="list-style-type: none"> • Watch and take notes on Videos • Understand The Scientific Methods • Differentiate between Fact vs. Hypothesis vs. Law • Know the <ul style="list-style-type: none"> ▪ NSTA Cross-Cutting Concept Matrix ▪ Framework for K-12 Science Education ▪ Texas Essential Knowledge and Skills for Science 	<p>Writing Assignment #1: Characteristics of Science & Framework for K-12 Science Education</p> <p>Writing Assignment #2 Scientific Literacy</p> <p>(50 points each)</p>
M2 – TEK Alignment and Content Knowledge	Use the Science TEKS T-Chart to list the science concepts of which you have solid background knowledge and which you feel are your strengths. Also use it to document the areas of weakness in which you need more study.	<p>Writing Assignment #1: TEKS T-Chart (50 points)</p> <p>EDUC 4053 Content Pre-Test (34 points)</p>
M3 – Inquiry Based Instruction	<ul style="list-style-type: none"> • Watch Videos, Read Articles and Understand the BSCE 5E Instructional Model • Why Use The 5E Model For Science Instruction? • Inquiry-Based Learning • STEM in Early Learning - Using Open-Ended Questions to Encourage Learning 	<p>Writing Assignment: Inquiry Based Instruction</p> <p>(50 points)</p>
M4 – Creating an Inquiry Based Classroom Environment	<ul style="list-style-type: none"> • Creating a Positive Learning Environment • Inquiry Based Learning in the Classroom • Ways to Make an Inquiry-Based Classroom • Using Technology to Teach Science 	<p>Writing Assignment: Creating and Inquiry-Based-Classroom Environment</p> <p>(50 points)</p>

The syllabus/schedule are subject to change.

<p>M5 – Teaching Science for Understanding</p>	<ul style="list-style-type: none"> • Contemporary Application of Constructivism and Learning Theories in Instructional • Design Inquiry-Based Learning in the Classroom • Scaffolding in the Classroom • Constructivism in the Classroom • Understanding Science and how science really work 	<p>Writing Assignment: Teaching Science for Understanding (50 points)</p>
<p>M6 – Safety and Technology in the Science Classroom</p>	<ul style="list-style-type: none"> • Safety Training Course for (upto) Middle School • Understand Lab Safety and Science Learning tools • The Value of Digital Tools in Science Classes • How to Integrate Technology in Science Classroom 	<p>Flinn Lab Safety Certificate (25 points) Writing Assignment: Technology in the Science Classroom (50 points)</p>

Module Topic	Materials to Read and Review	Assignments
<p>Field Module – Field Hours (TK20) and Assignments related to three observations</p> <p>300 points</p>	<p>Instruction Video, Notes, and other resources in the module.</p>	<ul style="list-style-type: none"> • Pre-conference – Via zoom or in-person <p>Submit the following BEFORE pre-conference observation:</p> <ul style="list-style-type: none"> • OBSERVATION LESSON PLAN Include all the documents and links related to the lesson plan in D2L. <p>Teaching</p> <ul style="list-style-type: none"> • CLASSROOM TEACHING OBSERVATION Video (DUE 11:30 pm on the day of teaching). • TEACHING REFLECTION - DUE 11:30 On the day of teaching. • TECHNOLOGY INTEGRATION Critique (DUE 11:30 the day AFTER teaching). • FINAL LESSON PLAN (you will have opportunity to revise and resubmit the final lesson plan)

TEACHING SCIENCE METHODS EC-3

		<ul style="list-style-type: none"> • Post-conference – Via zoom or in-person • Upload all documentation- feedback form and reflection on TK20 AFTER ALL signatures
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Module Topic	Materials to Read and Review	Assignments
FINAL PROJECT 1 and 2 245 points	Project Instruction in D2L module	REQUIRED ASSIGNMENT: Content Assessment in D2L (45 multiple choice questions). 5E Lesson Plan after TEKS unwrapping

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