



## Learning what NGSS Means

**Instructor:** Karen Sandberg/MISIC

**Licensure Renewal Credit: 1 credit**

This course is offered by MISIC and is approved for licensure renewal credit only upon successful completion of all the components. The course is not approved as credit toward an endorsement or new teaching authority. Transcripts and credit will be issued by MISIC.

This course is presented in a self-paced format. Participants, whether individually or as learning team, are expected to make reasonable progress through the components. In order to accommodate the participant's work schedule and professional setting, no due dates are attached to the individual components with the exception of the final due date.

**Dates: Online July 1, 2023-July 1, 2024**

### Course Description (Overview of Course)

Through the completion of these micro-credentials, the learner will focus on the NGSS structure to better understand the standards and be able to design 3-dimensional learning that incorporates the disciplinary core ideas, crosscutting concepts, and science and engineering practices.

### School Improvement Rationale (School data that indicates a need for this course).

As schools work to implement the NGSS standards into their science classrooms, there needs to be a significant shift in practices from the content-driven process used formerly, to a phenomena-driven, 3-dimensional approach that will allow students to figure things out. Understanding how the standards document is arranged and knowing how to use the information will be critical for success.

### Expected Outcomes: The learner will be able to...

Those who complete all components of the course will be able to:

- Explain the color-coding and decode a selected performance expectation
- Identify strategies for incorporating crosscutting concepts into instruction
- Articulate how content knowledge grows from one grade span to another
- Describe how a practice increases in complexity from one grade span to another

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*Note: Success criteria for each component are identified for each micro-credential component below.*

Micro-Credential Component*	Micro-Credential Description	Hours
How to Read the NGSS Standards Document	The NGSS standards document is loaded with information if you just understand how to read it. Learn how to use the coding and tools within the document to better understand each Performance Expectation.	3

**Success Criteria for this micro-credential:**

Using the NGSS document “How to Read the Next Generation Standards”

- Explain what each color in the standards represents
- Utilize the Foundation Boxes to access additional information about the standards
- Locate the connections of each standard to Literacy and Mathematics standards on the NGSS document
- Understand the architecture of the standards document

Micro-Credential Component*	Micro-Credential Description	Hours
Digging into Crosscutting Concepts of NGSS	Crosscutting Concepts are ideas that connect multiple disciplines of science and/or across content areas. Learn how these concepts are a part of the 3-dimensional learning and how students’ progress through their understanding from grade level to grade level.	3

**Success Criteria for this micro-credential:**

- Define the seven crosscutting concepts of the NGSS and include a summary of the guiding principles to explain the importance of the concepts
- Identify the crosscutting concepts you would integrate into a selected lesson/unit
- Describe the learning tasks students would do to demonstrate their understanding of the concept(s).
- Describe the progression of the crosscutting concept(s) in your lesson/unit with prior and subsequent grade levels

<b>Micro-Credential Component*</b>	<b>Micro-Credential Description</b>	<b>Hours</b>
Disciplinary Core Ideas: The Content of NGSS	Disciplinary Core Ideas are the content of the NGSS standards. Learn how to use the progressions to identify what students should be mastering at each grade level to be on the path to college and career readiness at graduation.	5
<p><b>Success Criteria for this micro-credential:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Explain the philosophy and underlying the structure of the Disciplinary Core Ideas (DCIs)</li> <li><input type="checkbox"/> Use the codes to identify DCIs in lesson/unit plans</li> <li><input type="checkbox"/> Explain how the core idea grow in complexity and sophistication across a minimum of three grade levels.</li> </ul>		
<b>Micro-Credential Component*</b>	<b>Micro-Credential Description</b>	<b>Hours</b>
Science and Engineering Practices: How we DO Science	Science and Engineering Practices are essential to learning about science. Learn how to integrate the practices into a lesson/unit and use the progression chart to understand expectations at prior and subsequent grade levels.	4
<p><b>Success Criteria for this micro-credential:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Define the eight science and engineering practices (SEPs), including a summary of the guiding principles.</li> <li><input type="checkbox"/> Submit a lesson plan that identifies the SEPs that can be integrated into the unit.</li> <li><input type="checkbox"/> Indicate the learning tasks students would do to demonstrate their understanding/skills of the practices.</li> <li><input type="checkbox"/> Explain the progression of the SEPs in the lesson/unit with prior and subsequent grade levels.</li> </ul>		

## Iowa Teaching Standards

Check which number(s) of the Iowa Teaching Standards that connect to the work defined in this course:

- Standard 1: Demonstrates ability to enhance academic performance and support for implementation of the school district's student achievement goals.
- Standard 2: Demonstrates competence in content knowledge appropriate to the teaching position
- Standard 3: Demonstrates competence in planning and preparing for instruction.
- Standard 4: Uses strategies to deliver instruction that meets the multiple learning needs of students.
- Standard 5: Uses a variety of methods to monitor student learning.
- Standard 6: Demonstrates competence in classroom management.
- Standard 7: Engages in professional growth
- Standard 8: Fulfills professional responsibilities established by the school district.