With the adoption of the Next Generation Science Standards (NGSS), Illinois schools have committed to key shifts in how science teaching and learning should happen in K-12 classrooms. NGSS emphasizes depth of explanatory disciplinary core ideas, a central role for the science and engineering practices, and a commitment to helping students build ideas incrementally, connecting what they learn across years and between the science strands.

Northwestern University is offering a new Certificate of Advanced Study in Next Generation Science Teaching to help classroom teachers, science coaches, and teacher leaders work together with Science Education leaders at Northwestern to make these changes a reality in today’s classrooms. In this sequence of four project-based summer courses, participants work on developing teaching practices, curriculum materials, and assessments to reflect the goals of NGSS.

Don’t just learn about NGSS, explore how to bring NGSS into your own classroom.

All courses are in a workshop format, in which teachers work together to bring the key shifts of NGSS into their own classrooms.

Course Instructors

Brian J. Reiser, author of Framework for K-12 Science, advisor to NGSS development, and partner with states on NGSS implementation

Michael Novak, middle school teacher, NGSS curriculum developer, PD provider, and Golden Apple Award Recipient.
The Four Course Sequence

Teaching with the Next Generation Science Standards

*One week summer intensive: July 5-9, 2016*

A detailed examination of NGSS and its implications for our teaching of science K-12. Includes hands-on experience learning science using the NGSS practices, exploration of teaching approaches across K-12 that support NGSS through video cases, and analyzing lessons and units for alignment with NGSS.

Science Curriculum Materials Design and Adaptation I

*Summer intensive (5 classes over 2 weeks): July 18-29, 2016*

Participants work in teams to adapt existing lessons to reflect three-dimensional learning. Participants learn the NGSS approach to coherent storylines supporting students in using the NGSS practices to develop and refine disciplinary and crosscutting ideas. The project will result in a unit for teachers’ own classrooms that reflect NGSS and can be enacted in the next school year. (Prerequisite: *Teaching with the Next Generation Science Standards*)

Using Video for Professional Learning I

*Summer 2017*

Participants learn how to collect video of their own teaching to support their professional learning, and will analyze video from their own and their peers' classrooms to explore approaches for teaching that are aligned with NGSS.

Science Curriculum Materials Design and Adaptation II

*Summer 2017*

Participants build on their experiences in the first design course and in the Video for Professional Learning course to develop coherent units aligned with NGSS in which students engage in cycles of investigation with science and engineering practices to develop, use and refine explanatory models. Grade-level teams work together to develop units usable for their own classrooms.

Tuition cost is regularly $3,253 per quarter course. Register for two 2016 summer courses in the Advanced Teaching Certificate and receive a fellowship of $3,253. Application fee waived for applications submitted prior to May 9, 2016. For more info and online application, see:

https://www.sesp.northwestern.edu/msed/certificate-for-advanced-study-education/