

Spring 2025 course information:

001618 ETS 615 section 92 On Shape Workshop
001608 ETS 615 section 62 Teaching CSCI Prin by Design
001609 ETS 615 section 63 Teaching Technological Design
001610 ETS 615 section 64 Teaching Advanced Tech App
001611 ETS 615 section 65 Teaching Advanced Design App
001612 ETS 615 section 66 Teaching Engineer Design
001613 ETS 615 section 67 Teaching EbD-TEEMS NxtGen K-2
001614 ETS 615 section 68 Teaching EbD-TEEMS NxtGen 3-6
001615 ETS 615 section 69 Teaching Exploring Technology
001616 ETS 615 section 90 Teaching Inventn & Innovatio
001617 ETS 615 section 91 Teaching Technological Systems

- **See course descriptions below**

3 Credits

\$500 for 3 semester credits

1. Register with St Cloud State University:
 - Non-degree seeking student: <https://www.stcloudstate.edu/srfs/registration/non-degree.aspx>
2. Register for course in E-services – Make sure it is the correct section. [Login \(minnstate.edu\)](#)
3. If after fall semester has started (August 24th) Send student ID# to krhelgeson@stcloudstate.edu
4. Override and course ID# will be sent to register in e-services

If you have questions or need additional information, please feel free to contact me at:

- krhelgeson@stcloudstate.edu
- 320-308-3127

Course Descriptions

ETS 615 section 92 On Shape Workshop

This course can be utilized in any classroom to strengthen Onshape currently being taught in classes or serve as a course to be taught in its entirety as a standard Computer Aided Design course.

ETS 615 section 62 Teaching CSCI Prin by Design

In this course, students program using the Snap programming language, learn some of the most powerful ideas of computer science, demonstrate creativity, and discuss the social implications of computing, thinking deeply about how they can be personally active in promoting and reducing the possible harms

ETS 615 section 63 Teaching Technological Design

In this course, students learn engineering scope, content, and professional practices are presented through practical applications. Students in engineering teams apply STEM concepts and skills to solve engineering design problems and innovate designs

ETS 615 section 64 Teaching Advanced Tech App

Students develop the characteristics of technologically literate citizens. It employs teaching/learning strategies that enable students to explore and deepen their understanding of "big ideas" regarding technology and makes use of a variety of assessment instruments to reveal the extent of understanding.

ETS 615 section 65 Teaching Advanced Design App

Students develop the characteristics of technologically literate citizens. It employs teaching/learning strategies that enable students to explore and deepen their understanding of "big ideas" regarding technology and makes use of a variety of assessment instruments to reveal the extent of understanding.

ETS 615 section 66 Teaching Engineer Design

This course focuses on how engineers apply their creativity, resourcefulness, mathematical, scientific, and technical knowledge and skills in the creation or refinement of technological products/systems. A key approach will be the employment of a sophisticated, sequential, and iterative design and development process to solve authentic engineering tasks/problems.

ETS 615 section 67 Teaching EbD-TEEMS NxtGen K-2

Using constructivist models, students participating in the program learn concepts and principles in an authentic, problem/project-based environment. Through an integrative STEM environment, EbD™ uses all four content areas as well as English-Language Arts to help students understand the complexities of tomorrow.

ETS 615 section 68 Teaching EbD-TEEMS NxtGen 3-6

Computing by Design course is designed to introduce students to technology and engineering at early levels to develop early understanding with hands on learning, problem solving skills, methodologies, and design challenges. All lessons tie into the TEEMS NxtGen curriculum and is meant to accentuate the lessons with new ideas and perspectives.

ETS 615 section 69 Teaching Exploring Technology

Prepares students by equipping students with an understanding of technology and engineering through the use of hands-on activities that promote both Technological and Engineering Literacy. Students will have opportunities to apply the engineering design process in real-world problem-solving lessons.

ETS 615 section 90 Teaching Invention & Innovation

Students learn all about invention and innovation. They study the history of inventions and innovations, including their impacts on society. They learn about the core concepts of technology and about the various approaches to solving problems, including engineering design and experimentation. Students apply their creativity in the invention and innovation of new products, processes, or systems. Finally, students learn about how various inventions and innovations impact their lives.

ETS 615 section 91 Teaching Technological Systems

Teaches students how systems work together to solve problems and capture opportunities. A system can be as small as two components working together or can contain millions of interacting devices. We often break down the macro systems into less complicated microsystems to understand the entire system better. Electronic systems are interacting with natural systems as humans increasingly rely on the use of monitoring devices for medical reasons. Electrical systems are interacting with mechanical and fluid power systems as manufacturing establishments become more and more automated.