Spring 2016 - EGED 531: Engineering Design  
(3 graduate credits) [Jan 22/23, Feb 19/20, Mar 18/19, Apr 15/16] The engineering design process for PK-12 educators: design projects, hands-on computer labs, lectures and field trips will introduce students to how the engineering design process is applied in a variety of fields. Students will learn how to create engineering drawings, apply an engineering design process, use computer-aided-design (CAD) technology, and work with rapid prototyping tools. Strategies for incorporating engineering design projects into the K-12 classroom will be discussed. Instructors: Dr. Deb Besser & Dr. AnnMarie Thomas

Summer 2016 - TEGR 528 and EDUC 327: Engineering in the P-12 Classroom  
(3 graduate credits; 4 undergraduate credits) [June 13-17] Develop a comprehensive understanding of PK-12 in school and out of school STEM curriculum with an engineering focus while developing curriculum consistent with academic standards. Emerging and innovative STEM elements will be explored alongside engineering experiences. Educators will create a unit or module focused on an engineering activity for P-12 students in their licensure area. Instructors: Dr. Debbie Monson and Dr. Deb Besser

Summer 2016 - EGED 612 Digital Electronics and Computing Systems  
(3 graduate credits) [June 20-24] Explore the fundamentals principles that have enabled the "digital computing revolution" in communications, computing, entertainment, and monitoring systems. Educators will learn about Binary number system, Boolean logic, design of digital systems, the architecture of a microprocessor, interfacing it with external circuitry/sensors and communicating with the processor through a computer programming language. A course project will be due the first week of August. Instructor: Dr. Kundan Nepal

Summer 2016 - EGED 699 Materials Science and Engineering  
(3 graduate credits) [June 20-24] Unlock the secrets to how materials marvels, like graphene, shape memory metal, kevlar, and diamond, attain their exceptional properties. Educators will explore why the materials around us display the collage of properties they do, and how we can engineer materials to attain the properties we desire. This course will step through the various properties of materials (mechanical, thermal, electrical, optical, magnetic, and deteriorative) and reveal how each of these is intimately linked with the underlying structure of the material. A course project will be due the first week of August. Instructor: Dr. Brittany Nelson-Cheeseman

Fall 2016 - EGED 530 and ENGR 130: Fundamentals of Engineering  
(3 graduate credits; 4 undergraduate credits) [Sep 9/10, Oct 7/8, Nov 11/12. Dec 9/10] Learn more than textbook engineering with experiences in electronics, machine design, manufacturing engineering, computer programming, thermodynamics, statics, fluids and mechanics of materials. Engaging engineering professors go beyond relating the content with academic standards connections as they provide the “inside scoop” on breaking innovations as well as the inside story on the historical importance. Instructor coordinator: Dr. Deb Besser

The graduate certificate in engineering education consists of 1. Fundamentals of Engineering, 2. Engineering Design, 3. Engineering in the P-12 Classroom and 4. an EGED elective including EGED 612 and EGED 614. Questions? contact Dr. Deb Besser at deb.besser@stthomas.edu http://www.stthomas.edu/CEE To enroll in graduate courses, complete the FREE application with the “EGED” waiver code at http://www.stthomas.edu/CEE/ Graduate courses are $1200/course.