CECS 5900: Creating Technology Solutions
For Students with Autism Spectrum Disorders
3 Credit Hours

**Audience:**
Graduate Students, Parents/Caregivers, Pre and In-Service Teachers (General Ed. & Special Ed.), School Psychologists, School Counselors

**Course Description:**
A wide variety of technologies are available to assist students in the Autism Spectrum. Technology can level the playing field, make the impossible possible (language and writing), provide opportunities for learning, assist with organizational skills and time management, and supply edutainment. Many students in the Autism Spectrum are highly visual learners, and many gravitate toward computerized tools. In this course, students will work one-on-one with a child in the Autism Spectrum to determine his/her characteristics as a learner, develop a profile, and interview parents to determine three relevant learning outcomes. After evaluation and consultation with the parents and the course instructor, students will design, evaluate, and implement one technology-based solution for each learning outcome. Students will collect data from parents and the child to determine where revisions should be made.

**Student Learning Outcomes:**
Creating Technology Solutions for Students with Autism Spectrum Disorders was designed to help teachers, prospective teachers, parents, caregivers, school psychologists, and school counselors understand and interact positively with families struggling with ASDs. This course allows students to create technology-based solutions for real families with real needs. Students in the course will learn:

1. Methods for analyzing learning outcomes and defining specific tasks that support those outcomes,
2. Guidelines for the selection, implementation, and evaluation of software and hardware tools,
3. Research-based practices for the design of effective technology solutions,
4. Procedures for conducting research on the effectiveness of three technology-based solutions.
**Course Instructor:**

Demetria Ennis-Cole, Ph.D. ([Demetria.Ennis-Cole@unt.edu](mailto:Demetria.Ennis-Cole@unt.edu)) is an Associate Professor in the Department of Technology and Cognition at the University of North Texas. She has degrees in Computer Science and Curriculum & Instruction (emphasis area: Computer Education). She worked in industry as a Programmer for International Business Machines, and she worked as a Computer Analyst at Louisiana State University before accepting a faculty position with The University of North Texas. Ennis-Cole is included in Outstanding Young Women of America, and she is a Patricia Roberts Harris Fellow, an Image Award Recipient, a recipient of the TCEA Area 10 Excellence with 21st Century Tools Award, and a recipient of ISTE’s Inspire by Example Award. She is a member of several organizations including The Easter Seals North Texas Autism Advisory Board, The Autism Society of America, The International Society for Technology in Education, The Autism Society of Collin County, and others. Her research interests include Technology Utilization by Special Populations (Mature Adults, pre-and-secondary students, and students with Autism Spectrum Disorders), Preservice Teachers and Technology Training, Software Evaluation, and Artificial Intelligence in Education. She added students with Autism Spectrum Disorders after working with her son, who was diagnosed with Autism ten years ago.

**Course Overview:**

I. An Overview of Learners with Autism Spectrum Disorders
   a. Background and Definitions
   b. Autistic Disorder, Asperger, PDD-NOS, Retts Disorder, Childhood Disintegrative Disorder and associated profiles
   c. General Strengths and Weaknesses of Learners in the Autism Spectrum
   d. Functional Ability

II. Overview of the Technologies Useful for students with Autism

III. Research on Emerging Trends in the Development of Educational Software

IV. Research on Human-Computer Interaction and Software Engineering Principles and their Relationship to end-users

V. Analyzing Blogs on Parents’ Most Common Problems with their Children in the Spectrum and Technologies and procedures that are Helpful

VI. Hardware and Software Selection, Evaluation, and Implementation

VII. Strategies for working with Families of Students with ASDs.

VIII. Creating a Learner’s Profile