



Integrative Science, Technology, Engineering, and Mathematics Education is defined as: “technological/engineering design based pedagogical approaches used to *intentionally* teach the content and practices of science, technology, engineering and mathematics education *through* the content and practices of technology/engineering education. Integrative STEM Education is equally applicable at the natural intersections of learning within the continuum of content areas, educational environments, and academic levels” (Wells & Ernst, 2012/2015).

## Education Specialist (EdS)

# Integrative STEM Education (I-STEM ED)

### Admission Requirements

Master’s degree (3.3+ graduate GPA); Faculty interview (F2F or via audio/video web conferencing); Writing samples; 3 letters of recommendation; Resume

### Degree Requirements

Approved Plan of Study (POS); 30+ semester hours (SH) beyond master’s (of which at least 21 SH must be completed from VT); Field Study Project; Final Exam. The Integrative STEM Education coursework for this degree (shown below) is delivered F2F and via synchronous audio/video web conferencing. Graduate coursework may be taken from Virginia Tech online or conventionally, or transferred in from other universities (subject to approval by the student’s graduate committee).

### Integrative STEM Education Core Courses (15+ SH)

- EDCI 5804: I-STEM Education Foundations (3 SH – Fall Semester)
- EDCI 5814: I-STEM Education Pedagogy (3 SH – Fall Semester)
- EDCI 5824: I-STEM Education Trends and Issues (3 SH – Spring Semester)
- EDCI 5834: I-STEM Education Research (3 SH – Alternate Spring Semesters)
- EDCI 5844: I-STEM Education Seminar (3 SH – Fall and Spring Semesters)
- EDCI 5854: Biotechnology Literacy by Design (3 SH – Alternate Spring Semesters)
- EDCI 5774: Readings in STEM Education (3 SH – Fall and Spring Semesters)
- EDCI 5964: Field Studies in [I-STEM] Education (3 SH – Fall and Spring Semesters)

### Research & Evaluation (6+ SH, including EDCI 5834 above)

- EDRE 6605: Quantitative Research Methods in Education (3 SH)
- Or EDRE 6504: Qualitative Research Methods in Education (3 SH)

### Educational Foundations (6+ SH, including EDCI 5804 above)

- Educational Foundations Elective (3 SH)

### Field Study Project

- EDCI 5964: Field Studies in [I-STEM] Education (3 SH)

### Cognate (3+ SH)

Courses outside the SOE, including: STS; STEM content area courses; Engineering Ed; etc.

### For more information

Enrollment Services Assistant (540) 231-5348