Integrative Science, Technology, Engineering, and Mathematics Education (I-STEM ED) is defined as: “the application of technological/engineering design based pedagogical approaches to intentionally teach content and practices of science 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

Admission Requirements
Master’s degree (3.3+ graduate GPA); Faculty interview (F2F or Internet audio); Writing samples; 3 letters of recommendation; Resume

Degree Requirements
Approved Plan of Study (POS); 30+ semester hours (SH) beyond master’s (21+ SH from VT); Field study; EdS Project; Final examination. The Integrative STEM Education coursework for this degree (shown below) is available via synchronous web-based, audio/video delivery.

Integrative STEM Education Core Courses (15+ SH)
EDCI 5804: STEM Education Foundations (3 SH – Fall Semester)
EDCI 5814: STEM Education Pedagogy (3 SH – Fall Semester)
EDCI 5824: STEM Education Trends and Issues (3 SH – Spring Semester)
EDCI 5834: STEM Education Research (3 SH – Alternate Spring Semesters)
EDCI 5844: 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 (3+ SH)
EDCI 7964: 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
Teaching & Learning Administrative Assistant (540) 231-5558