Integrative STEM 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).

Doctor of Philosophy (PhD)
Integrative STEM Education (I-STEM ED)

Admission Requirements
Master’s degree (3.3 graduate GPA min.); GRE scores; 2 writing samples; Faculty interview (F2F or via audio/video web conferencing); 3 letters of recommendation; Resume

Degree Requirements
Approved Plan of Study (POS); 90 semester hours (SH), inclusive of approved coursework from a prior master’s degree and others as outlined below; Dissertation; Residency (two consecutive semesters of full-time enrollment); Qualifying and Preliminary Examinations. The Integrative STEM Education (I-STEM ED) coursework for this degree (shown below) is available via synchronous web-based, audio/video delivery. Graduate coursework may be taken from Virginia Tech online or conventionally, or may be 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)

Education Electives
Learning Sciences, Educational Foundations, Educational Administration, etc.

Research & Dissertation Courses
15+ SH of coursework and 30+ SH of EDCI 7994 (dissertation), as approved by the graduate student’s committee

For more information
Enrollment Services Assistant (540) 231-5348