

INTEGRATED STEM INSTRUCTIONAL LEADERSHIP CERTIFICATE

Program Website: <https://www.towson.edu/fcsm/departments/physics/grad/stem-instructional-leadership-certificate/>

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This program is not currently admitting new students.

This 18-unit, part-time graduate certificate program prepares educational professionals in PreK-6 school settings to become instructional leaders in integrated science, technology, engineering and mathematics (STEM) education. Teachers who graduate from the program will develop an understanding of: STEM subject content and practices, integrated STEM (iSTEM) instructional approaches, and skills and habits of mind essential to effective engagement in iSTEM. Further, they will be able to:

- Critically analyze and evaluate existing STEM or iSTEM curricula and design or redesign high-quality iSTEM curricula
- Plan, teach, assess and reflect upon iSTEM lessons or units taught to students
- Plan, deliver, assess and reflect upon iSTEM professional learning experiences for other teachers or administrators

The program engages its participants in instruction that: supports state standards relevant to iSTEM and individual STEM subject areas; is inquiry-, problem-, and project-based; is highly collaborative and interactive; and is connected to the schools and districts in which the participants work. This program has been approved by the Maryland State Department of Education (MSDE) for those seeking the Instructional Leader: STEM (PreK– 6) endorsement.

Learning Outcomes

When teachers complete this program, they will be able to:

1. Demonstrate knowledge of STEM subject content and practices.
2. Demonstrate knowledge of integrated STEM (iSTEM) instructional approaches.
3. Demonstrate knowledge of skills and habits of mind essential to effective engagement in iSTEM.
4. Critically analyze and evaluate existing STEM or iSTEM curricula and design or redesign high-quality iSTEM curricula.
5. Plan, teach, assess and reflect upon iSTEM lessons or units taught to students.
6. Plan, deliver, and assess and reflect upon iSTEM Professional Learning Experiences (PLEs) for teachers.