

**University of North Florida**  
**College of Education and Human Services**  
**Project InTERSECT**  
Integrated STEM Badge

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### **Integrated STEM Badge Goals**

These 8 badge modules will prepare pre-service elementary to emphasize the role of inquiry, creativity, and innovation in elementary STEM classrooms. Strategies for the development of creative thinking and innovation are discussed.

### **Integrated Badge Overview**

In STEM classrooms, every student should have the opportunity to think critically, create, and innovate. Teachers provide these opportunities for all students by facilitating inquiry-based learning within inclusive learning environments. As students have access to meaningful and relevant STEM problem solving experiences, they will see themselves as STEM thinkers and doers. In this course, you will develop working definitions of creativity and innovation from the perspectives of a learner and from the perspective of a future teacher. These definitions will drive our development of a shared vision for integrating STEM in curriculum, instruction, and assessment.

### **Integrated Badge Course Delivery**

This course will be delivered online in an asynchronous format using weekly modules within the Canvas Learning Management System (LMS).

To participate in this course, you will need to satisfy the following technical requirements:

- Maintain high-speed Internet access with standard up-to-date browsers
- Use Gmail and Canvas as the official methods of communication
- Access course materials in our [Integrated STEM Course Materials](#) folder
- Create logins and passwords to access supplemental websites

### **Required Textbooks**

- Reagan, M. (2016) *STEM-infusing the elementary classroom*. Corwin Press.
- Vasquez, J. A., Comer, M., & Gutierrez, J. (2020). *Integrating STEM teaching and learning into the K-2 Classroom*. NSTA Press.

### **Learning Objectives**

- Decompose real-world problems into manageable sub-problems in order to integrate existing procedures and solutions
- Solve a variety of non-routine problems and design ways to integrate non-routine problem solving within an elementary environment
- Compare and refine multiple algorithms for the same task and determine which is most appropriate
- Create and implement curricula that align computational thinking with other subject areas using technology

## Norms for Participation in Weekly Modules

- Modules will be made available **every Tuesday at 8:00am** with an accompanying Canvas email summarizing expectations and due dates.
- Weekly asynchronous module participation includes discussions of readings and small group problem solving related to computational thinking skills and pedagogies.
- You must complete the associated module exit ticket by **Monday at 11:59pm**. If you are not able to meet a due date, please email your badge facilitator in advance.
- Your facilitator will provide weekly feedback on your module work in our shared Google class slides and in your individual digital interactive notebook (DINb) Google slides.
- You may need to revise your work or respond to additional questions if we see that you still have room to grow in your understanding.
- You must earn a 100% on all module exit tickets to complete this course.

## Weekly Module Topics

Creativity and Innovation in STEM	
Week 1	What does it mean to create and innovate in a STEM lesson?
Week 2	How do we foster creativity in the elementary STEM classroom?
Week 3	How do we use inquiry to foster innovation in the elementary STEM classroom?
Week 4	How do we make STEM problem solving equitable and meaningful?
Integrating STEM in Classroom Practice	
Week 5	How does your building, district, & community define STEM?
Week 6	What does STEM mean to students & educators in the culture of the school?
Week 7	What does a STEM classroom look like?
Week 8	What does a STEM infused lesson/unit look like?