**Computer Science in the Elementary Classroom (EDMA 269)**

**Drake University**

**School of Education**

**Continuing Education and Professional Development**

**Des Moines, Iowa**

**Course Dates:** Offered every semester

**Credit Hours:** 2 credit hours

**Instructor:** Cindy Herren or Shannon Fleming

**Phone:** Available Upon Request

**Email:** cindy.herren@drake.edu or shannon.fleming@drake.edu

**Instructor Availability and Response Time:**

Your course interaction with your instructor and classmates will take place in Blackboard on a regular basis. You and the instructor will be active in Blackboard and other websites throughout the module. A virtual visit can also be scheduled if necessary.

Due to the asynchronous format of our course, you can anticipate responses to questions within 24-48 hours on weekdays and 48 hours on weekends so be sure to plan accordingly. You can expect to receive feedback on assignments within three days of the assignment due date, or earlier when possible.

**Course Description:**

Our society’s increased dependence on technology is generating a need for highly qualified individuals who have the skills to support and create that technology. Thus, it is never too early to introduce the fundamentals of computer science to elementary school students—and this course will help you do just that.

In this course, you’ll learn strategies for preparing children to meet the needs of our modern society, starting with the basics of computational thinking in K–3 and moving into beginning programming in grades 4–5. You’ll review a variety of resources and choose those that will work best in your classroom setting given your access to technology. In addition, you’ll learn the long-term benefits of teaching students computer science skills and how to be good digital citizens.

**Learning Outcomes:**

* Students will design instruction that allows a K-5 child to demonstrate computer science skills.
* Students will Identify resources for teaching coding skills and computer science in elementary school, with and without access to technology in the classroom.
* Students will create a long-term plan for implementing computer science into the classroom.
* Students will describe the importance of including computer science in the classroom.
* Students will locate computer science lessons that are appropriate for K-5 students.

**Required Textbooks**:

The following required texts can be purchased on Amazon as hardcover, paperback or an ebook.

**Title** Hello Ruby: Adventures in Coding

**Author** Linda Liukas

**ISBN** **Hardcover** 978-1-387-29254-7

**Link** <https://www.amazon.com/Hello-Ruby-Adventures-Linda-Liukas/dp/1250065003>

**Title** Hello Ruby: Journey Inside the Computer

**Author** Linda Liukas

**ISBN** **Hardcover** 978-1-250-06532-2

**Link** <https://www.amazon.com/Hello-Ruby-Journey-Inside-Computer/dp/1250065321>

**Title** Hello Ruby: Expedition to the Internet

**Author** Linda Liukas

**ISBN** **Hardcover** 978-1-250-19599-9

**Link** <https://www.amazon.com/Hello-Ruby-Expedition-Linda-Liukas/dp/1250195993>

**Educational Resources:**

The required texts, along with assorted articles and videos, form the core of foundational information. In addition, participants are encouraged to research additional information using the online resources available through Cowles Library and resources available locally.

**Module Overview:**

Module 1:

The what and why of computer science

Equity in CS

Module 2:

Constructs and standards

Intro to Hello Ruby Adventures in Coding

Module 3:

Why unplugged vs. plugged activities

Looking at lessons and application to standards

Hour of Code

Deep dive of code.org

Module 4:

Deep dive Scratch and Scratch Jr., Kodable

Module 5:

Common Sense Media and Digital Citizenship

Hello Ruby Journey Inside the Internet

Hello Ruby Expedition to the Internet

Module 6:

Tie all together

Share additional resources

Overview of robotics

Share projects

**Total Points:**

**Points and Letter Grades:**

● 90-100% A

● 80-89% B

● 70-79% C

● 60-69% D

● 0-59% F

**Evaluation Criteria:**

Assignment-specific assessment guidelines are detailed in each module in Blackboard. However, the following criteria apply for all assignments:

1. Assignments will be turned in by midnight on Sunday of the following week. For example, if class starts on Monday the 1st, all assignments in Module One are due at midnight on Sunday the 7th. Late work will not be accepted, unless the student communicates with the instructor prior to the due date. If you know of and communicate potential due-date obstacles *in advance*, accommodations may be considered.
2. Proper grammar and spelling is expected on each assignment, including blog and discussion posts, and will be taken into consideration when grading submissions.
3. It is expected that all required readings and components of each module will be completed. The instructor may hold students accountable for information included in any portion of each module, whether there is an assessment for that information or not.

**Discussions and Participation**

Each week you will engage in discussion related to the contents of the course. Active and engaging communication between students in the class will make our experience much more rich and interesting. You are expected to read the discussion question at the beginning of the week, and shape your response based on the weekly readings, current events, research and your personal experience. Your initial post is due by Wednesday unless otherwise noted.

True conversation happens when you say something, then someone else listens and responds, AND THEN you respond back so that both parties are having a dialogue. Though our conversation will happen asynchronously, the same pattern should apply. The minimum requirement for participation in this class is that you respond to at least two of your classmates’ posts over the course of at least two different days after the initial posts are made (between Thursday and Sunday). Additional communication is highly recommended.

Please review the *Discussion Guidelines and Rubric*, located in the *Assignment Guidelines and Rubric* folder for a breakdown of points and an explanation of what constitutes a substantial post.

**Deadlines and Late Policy:**

Students are expected to submit discussion responses and assignments on or before their due dates. Late work will be accepted up to four days past the due date with a penalty of 10% per day of the value of the assignment. No work will be accepted beyond four days late unless an exception has been agreed upon between the student and instructor prior to the end of the late assignment grace period.

**Assignment Submission**

All coursework must be submitted through Blackboard, the university’s learning management system. If a technical problem with Blackboard prevents the student from submitting, the student should email the instructor with the coursework attached before the deadline to document the work was completed by the deadline and then submit the coursework within Blackboard when the technical issue has been resolved.

**Statement of Plagiarism:**

The penalty for plagiarism, cheating, and other forms of academic dishonesty will vary from incident to incident, depending upon the scope and magnitude of the offense and the circumstances in which it occurred. Give credit where credit is due.  Consult the SOE Governance, Appendix II, Page 30 for definitions and additional policies regarding plagiarism, cheating, academic dishonesty, and the appeal process at the following link: <http://www.drake.edu/media/collegesschools/soe/docments/soe_governance_%209222015.pdf>

 **Accommodations Clause:**

If you have a disability and will require academic accommodations in this course, please contact your instructor at the beginning of the course or prior to the first official day class. Accommodations are coordinated by Michelle Laughlin. Jean Hansen may assist as well. Their contact information is listed below:

Michelle Laughlin Jean Hansen

Director of Student Disability Services Sr. Online Instructional Designer

515-271-1835 515-201-9571

michelle.laughlin@drake.edu jean.hansen@drake.edu