**Course Syllabus: Creative Coding**

**Drake University School of Education Des Moines, Iowa**

**Instructor:** Johnnie Tysklind

**Phone:** Available Upon Request

**Email:** johnnie.tysklind@drake.edu

**Credit Hours:** 3 credit hours

**Course Expectations:**

This course is self-paced and all assignments will be turned into Blackboard. During Module 4 and Module 8 reach out to schedule your virtual meeting with your instructor. As a result, please have all your assignments submitted for grading by **(check website for dates)** and reach out to your instructor at that time. Our goal is to have everything for this course completed by **(check website for dates)**, including all your assignments as well as the Final Instructor Meeting.

**Course Description:**

Computer science is all around us and can be used to elevate learning across multiple disciplines. This course will help students build a prototyping mindset as it introduces ways to integrate programming into various content areas, which include but are not limited to: math, reading, writing, science, and social studies. Educators will design lessons and complete activities using a block based visual coding language that can be intertwined into all learning experiences within the elementary classroom.

**Learning Outcomes:**

* Students will **develop** a mindset for prototyping with code by using a process to create a prototype and applying that same process to activities designed for students in their classroom setting around various coding concepts.
* Students will **understand** the five areas of coding based on the algorithms and programming strand of the K-12 computer science framework statements by completing an activity in Scratch or Scratch Jr. that aligns with an algorithms and programming concept.
* Students will **create** activities and lessons that align with the K-12 computer science framework statements by identifying correlating computer science standards in a lesson plan.
* Students will **design** instruction for a K-8 classroom that integrates coding into various content areas by creating a lesson incorporating computer science standards and content standards.
* Students will **select** resources for teaching coding skills in a K-8 setting, with or without technology by creating a collection of resources and choosing which resources work best in their classroom setting.
* Students will **use** the engineering design process by developing a coding program that utilizes each step within the process.

**Required Textbooks**:

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

**Title:** *This is a Prototype: The Curious Craft of Exploring New Ideas*

**Author:** Scott Witthoft

**ISBN Paperback**: 1984858041

**Link:** [**https://www.amazon.com/This-Prototype-Exploring-Stanford-d-school/dp/1984858041**](https://www.amazon.com/This-Prototype-Exploring-Stanford-d-school/dp/1984858041)

**Additional Resources:**

In addition to the required course text, there will be resources outlined in each module that you will read or view. Throughout the course you will also be gathering your own resources to align with your classroom needs.

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| **Module Overviews and Course Work** |
| **Module 1 – Building a Mindset to Code** |
| Introduction (5) |
| Reading Response Post (5) |
| Playground: Prototyping Activity (20) |
| Pause & Reflect (5) |
| Self-Assessment on Rubrics (5) |
| **Total Points: 40** |
| **Module 2 – Introduction to Scratch & Scratch Jr.** |
| Reading Response Post (5) |
| Playground: Backgrounds, Characters, and Coding Blocks (10) |
| Sketchnote: Why Code? (10) |
| Resource Collection (5) |
| Pause & Reflect (5) |
| Self-Assessment on Rubrics (5) |
| **Total Points: 40** |
| **Module 3 – Algorithms** |
| Reading Response Post (5) |
| Playground: Using Algorithms in Scratch or Scratch Jr. (10) |
| Lesson Plan (15) |
| Pause & Reflect (5) |
| Self-Assessment on Rubrics (5) |
| **Total Points: 40** |
| **Module 4 - Variables** |
| Reading Response Post (5) |
| Playground: Using Variables in Scratch or Scratch Jr. (10) |
| Lesson Plan (15) |
| Pause & Reflect (5) |
| Self-Assessment on Rubrics (5) |
| Instructor Meeting #1 (10) |
| **Total Points: 50** |
| **Module 5 – Controls** |
| Reading Response Post (5) |
| Playground Activity: Using Controls in Scratch or Scratch Jr. (10) |
| Lesson Plan (15) |
| Pause & Reflect (5) |
| Self-Assessment on Rubrics (5) |
| **Total Points: 40** |
| **Module 6 – Debugging (Modularity)** |
| Reading Response Post (5) |
| Playground Activity: Debugging in Scratch or Scratch Jr. (10) |
| Lesson Plan (15) |
| Pause & Reflect (5) |
| Self-Assessment on Rubrics (5) |
| **Total Points: 40** |
| **Module 7 – Program Development & Engineering Design Process** |
| Reading Response Post (5) |
| Playground Activity: Program Development in Scratch or Scratch Jr. (10) |
| Lesson Plan (15) |
| Pause & Reflect (5) |
| Self-Assessment on Rubrics (5) |
| **Total Points: 40** |
| **Module 8 - Applying the K-12 CS Framework Practices & Reflecting** |
| Reading Response Post (5) |
| Applying the K-12 CS Framework Practices (10) |
| Pause & Reflect (5) |
| Self-Assessment on Rubrics (5) |
| Instructor Meeting #2 (10) |
| **Total Points: 35** |
| **Course Total Points: 325** |

**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. Complete all course work. Since this is a self-paced course, assignments will be submitted at your own learning pace in the order the modules are listed. All assignments are DUE: **(check website for dates)**,
2. Proper grammar and spelling is expected on each assignment, including reading response posts on Blackboard, 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.

**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](http://www.drake.edu/media/collegesschools/soe/docments/soe_governance_%25209222015.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

Director of Student Disability Services 515-271-1835

michelle.laughlin@drake.edu

Jean Hansen

Sr. Online Instructional Designer 515-201-9571

jean.hansen@drake.edu