CSED 1310
Programming Environments for Elementary Education
Spring 2025

Course Information

Class Information

Time: MWF 9:00 - 9:50 AM
Classroom: Lang 222

Instructor Information

Name: Dr. Ben Schafer
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Phone: 319-273-2187
Office: 221 Lang Hall

Student Office Hours

I will hold regular student office hours on

MWF, 11:00-11:50 and 1:00-2:00

While advance reservations using https://bit.ly/SchaferCalendar are helpful, they are not required. However, those with reservations have first priority. If you would like to meet with me face-to-face you may show up at my office during these hours. [You may need to knock as I may shut the door due to the classroom right next to the office.]

If you would like to meet with me on Zoom rather than face-to-face, you should make a reservation and indicate this preference in the form. At your scheduled time, join Zoom using
https://uni.zoom.us/j/3192732187

If these times don't work for you, please send me an email and propose one or more specific alternatives. I want to meet with you at a time/place that works for both of us, and I am very willing to work things out.

Class Websites

- https://cs.uni.edu/∼schafer/1310 (Most course/lesson materials)
- Blackboard (Grades and Competency Demos)

Textbook

No textbook adequately fits our needs. Instead, all required readings and other materials will be selected from legally available resources on the Internet or from instructor-produced materials.

Computer Use

Most of the learning materials for this course are available online. You will need regular access to a computer with Internet access. If you do not have access to a device for daily use, please contact me and we will discuss how you might check one out from the university.

Course Learning Outcomes

Course Catalog Description

Introduction to computational thinking and computer programming. Taught as a survey of programming environments used by elementary education teachers. Topics include structure of programming, and the study of several programming environments used by students at a variety of age/ability levels.

The Mission of the UNI Educator Preparation Program

The UNI Educator Preparation Program provides an authentic and challenging education that empowers candidates to serve as reflective, professional educators who advocate for students, schools, communities, and the profession in a dynamic and changing world.

Belief Statements UNI Educator Preparation Program:

1. Candidates must deeply understand and reflect on their content and pedagogy.
2. Candidates must engage in rich, purposeful, and authentic field-based experiences to develop appropriate dispositions and practices.
3. Candidates have a responsibility to understand historical, social, cultural, and political contexts and how they impact education.
4. Candidates must understand the importance of diversity and equity and engage in opportunities to promote social justice.
5. Candidates must develop competence in the skills and dispositions that allow them to engage in effective leadership and advocacy.
6. Candidates must develop strong skills in order to effectively collaborate with all stakeholders for student learning.

Course Competencies

The material in this course has been designed to align with

The CSTA K-12 Standards (https://csteachers.org/k12standards/)

The CSTA Standards for CS Teachers (https://csteachers.org/teacherstandards/).

The material in this course has been divided into two categories of competencies that well-educated CS teachers should be able to demonstrate. These two categories are:

programming-oriented competencies - applying to knowledge of computer programming

teaching-oriented competencies - applying to teaching computer science

Students should be able to demonstrate their ability to:

Competency P1 – create appropriate algorithms (select and sequence action statements) to accomplish a wide variety of tasks. [1A-AP-08, 1A-AP-11, 1A-AP-12]

Competency P2 – appropriately use iteration (loop) structures (e.g., for, while, repeat-until, etc.) to control the repetition of actions. [1A-AP-10, 1B-AP-10]

Competency P3 – modify a provided piece of code to accomplish a given task. Includes debug-

ging non-functioning code. [1A-AP-14, 1A-AP-15, 1B-AP-11]

Competency P4 – appropriately use events to coordinate the actions of multiple "actors" (threads of execution) in programs. [1B-AP-10]

Competency P5 – create and use variables (both single value and lists) to store data necessary for the appropriate execution of programs. [1A-DA-05, 1A-AP-09, 1B-AP-09]

Competency P6 – appropriately use conditionals and selection statements (e.g. if-then, if-then-else, etc.) to control the choice between several actions. [1B-AP-10]

Competency P7 – appropriately use functions, both with and without parameters, to simplify the code in programs. [1A-AP-11]

Competency P8 – trace a segment of code to determine the result produced or state achieved by given code. [1A-AP-14, 1A-AP-15]

Competency T1 – define computer science and explain its relationship to the K-5 classroom [Teacher 1a]

Competency T2 – define the concepts of sequence/algorithm, loops, conditionals, events, variables, and functions within the context of a K-5 classroom [Teacher 1e]

Competency T3 – explain and provide age-appropriate examples of the concepts of sequence, loops, events, conditionals, operators, variables, and lists within the context of a K-5 classroom [Teacher 4f]

Competency T4 – evaluate code to a rubric and provide constructive feedback [Teacher 1a]

Competency T5 – explain and discuss the use of the CS Framework within a K-5 classroom [Teacher 1a]

Competency T6 – explain and discuss the Iowa Computer Science Standards within a K-5 classroom [Teacher 1a]

Competency T7 – identify standards integration and evaluate effectiveness of existing curriculum [Teacher 3e, 4a]

Competency T8 – create an age-appropriate and standards-aligned lesson plan integrating computer science with another common discipline [Teacher 3e, 4b, 4d, 4e]

Course Grading

Grading Structure

I use a grading system that is a combination of standards-based grading and Grading for Equity. My main beliefs are:

- As the teacher, my job is to design a variety of chances for you to learn material, practice required skills, and demonstrate overall competency.
- As the student, your job is to show that you can meet the course outcomes by demonstrating the defined competencies.
- Your final grade in the class should indicate how well you were able to meet course objectives/competencies by the end of the semester.

I WANT you to succeed in the course. That means giving you multiple opportunities to show that you can demonstrate course competencies. In most cases, if you can't do this the first time, you will be able to re-study and try again.

You will complete a variety of activities in this course to demonstrate your abilities. For each, your deliverable will be converted to a competency evaluation score from 1-4 which is a summarization of the overall competency you have demonstrated based on the following rubric:

Score	Meaning
1	UNASSESSABLE - You submitted deliverables for the activity but what you submitted shows little understanding of the competency being assessed.
2	NEEDS WORK - You have made significant progress towards demonstrating competency but there are limited items that remain unsatisfied.
3	SATISFACTORY - You have **met** the standards of the competency. [Your results show reasonable competency with few mistakes or remaining issues.]
4	EXCELLENT - You have **exceeded** the standards of the competency. [You have met the standards of competency and shown considerable understanding/knowledge of the material.]

While it might be tempting to view these categories as similar to GPA categories (which also use a 4-point scale) that is not the way they are used or interpreted.

If you are unsatisfied with your score on any competency or activity (in particular, if you did not earn at least a 3), you may meet with me to discuss the situation, restudy the material, and make a second attempt to demonstrate your ability to meet the standards of the competency/activity.

Final Grades

Final course grades will be determined using the following evaluation criteria.

Grade Earned	Average Score	Additional Conditions
A	> 3.5	All scores 3-4
A-	> 3.5	All scores 2-4
B	> 3	All scores 3-4
B-	> 3	All scores 1-4
C	> 2.5	All scores 2-4
C-	> 2.5	All scores 1-4
D	> 2	All scores 2-4
D-	> 2	
F	≤ 2	

Additional Comments:

- Because I allow – and encourage – retakes, most students do well in this course. It is rare for a student who has been an active participant in the class to not earn at least a C for a final grade.
- If I feel there are specific and individual circumstances where "mathematically" you earned a grade slightly lower than I feel your overall competence has demonstrated, then I reserve the right to raise your grade one level from that published above.
- If your Final Project grades are [lower | higher] than your overall course grade, I reserve the right to [lower | raise] your grade one level from that published above.
- To be responsive to your needs I reserve the right to modify the structure of this course as we are in progress. If there is significant deviation from the policies described in this syllabus, the new policy will be clearly discussed with you and in a timeframe that gives you time to plan accordingly.

Additional Policies and Statements

Respect Policy

I respect your time:

- I will come to class prepared to help you understand the course material and get ready to demonstrate your competency with these materials.
- I will make myself available to you at a variety of times outside of class to help you when you have questions.

Respect my time:

- Be on time to class.
- Pay attention in class.
- Come to class prepared by doing the work and visiting office hours when you need help.

Respect each other:

- Do not be disruptive.
- Work with each other to find solutions. You learn more by helping each other.
- Allow one another to make mistakes. This is an important part of the learning process.
- Use respectful language when talking with one another.

NOTE: Communication is key: I cannot help you if I do not know what is going on. If you are having trouble with a topic in the class, please reach out to me early. Do not wait until the situation is out of control. I am very willing to help. However, I must know that you need and want that help.

Scholastic Conduct

You are responsible for being familiar with the University's Academic Ethics Policies:

https://www.uni.edu/policies/301

Your final submission for assignments and competency demos should be your own original and individual work unless the directions specify otherwise. Copying from another source - a peer or an online or published source - is expressly forbidden. Any contribution from another source should by should be properly acknowledged in writing. Failure to do so is plagiarism and will necessitate disciplinary action. If an assignment makes you realize that you do not understand the material, ask a fellow student a question designed to improve your understanding, not one designed to get the assignment done.

In addition to the activities we can all agree are cheating (plagiarism, bringing notes to a closed book exam, etc.), assisting or collaborating on cheating is cheating. Cheating can result in failing the course and/or more severe disciplinary actions. Remember: Discussing assignments is fine and even encouraged. Copying code or answers is not.

Accessibility

The University of Northern Iowa (UNI) complies with the Americans with Disabilities Act Amendments Act of 2008 (ADAAA), Section 504 of the Rehabilitation Act of 1973, the Fair Housing Act, and other applicable federal and state laws and regulations that prohibit discrimination on the basis of disability. Students with disabilities experiencing a barrier to access should connect with

Student Accessibility Services (SAS) to request accommodations. For more information about the accommodation process, please contact SAS at (319) 273-2677 Relay 711, accessibilityservices@uni.edu, or GIL 118. Additional information is also available at sas.uni.edu.

The Learning Center

The Learning Center at Rod Library provides free tutoring for a variety of different areas (i.e., writing, math, science, business, Spanish, college reading and learning strategies). The Learning Center at Rod Library is open for walk-in assistance Monday-Thursday 10am-10pm and is free of charge for all UNI students. If you are unavailable during normal tutoring hours, online tutoring is also available through TutorMe. To request access, go to https://tlc.uni.edu/online. For more information, go to https://tlc.uni.edu, email TheLearningCenter@uni.edu , call 319-273-6023, or visit the TLC desk located on the main floor of Rod Library.

In addition, The Office of International Engagement offers free coaching sessions with experienced staff, in-person and online, for international and multilingual students. Students can schedule time with an advisor for in-person assistance or simply walk-in for services during established coaching times at The Learning Center in Rod Library. More information can be found on the OIE Academic Coaching Website.

Free Speech

The University of Northern Iowa supports and upholds the First Amendment protection of freedom of speech and the principles of academic and artistic freedom. We encourage the free and responsible exchange of diverse ideas on our campus. The University is committed to open inquiry and the spirited and thoughtful debate of such ideas.

All UNI employees, students, applicants and campus visitors are welcome to disclose their personal pronoun preferences, though no one shall be compelled to do so.

Office of Civil Rights Compliance and Equity Management

Content in this class has the potential to be disturbing to some individuals based on life experiences. If you ever feel the need to step out of the classroom or decline participation in an activity, please request an alternative learning experience.

UNI Policy 13.02 Discrimination, Harassment, and Sexual Misconduct states: "The University is committed to providing a workplace and educational environment, as well as other benefits, programs, and activities, that are free from discrimination and harassment based on a protected class, as well as retaliation."

Policy 13.02 outlines prohibited conduct and reporting processes. All University employees who are aware of or witness discrimination, harassment, sexual misconduct, or retaliation are required to promptly report to the Title IX Officer or Title IX Deputy Coordinator.

Title IX Officer Leah Gutknecht, Assistant to the President for Civil Rights Compliance, 117 Gilchrist, 319.273.2846, leah.gutknecht@uni.edu

If you or someone you know has been harassed or assaulted, you can find the appropriate resources at civilrights.uni.edu. Resources that provide free, confidential counseling are also detailed at civilrights.uni.edu.

For additional information, contact the Office of Civil Rights Compliance, 117 Gilchrist Hall, 273-2846, civilrights@uni.edu.