



**CS 300 : Cohorts A-S  
Summer 2024**

**All times are Central Standard Time (CST)**

| Group      | Professor                               | Professor Email      | Synchronous Meetings                                                         | Office Hours                   | Zoom     |
|------------|-----------------------------------------|----------------------|------------------------------------------------------------------------------|--------------------------------|----------|
| <b>A</b>   | Wiley Brazier                           | wbrazier@reach.edu   | Mon 6:00-7:00 PM                                                             | On request                     | Join now |
| <b>B</b>   | Wiley Brazier                           | wbrazier@reach.edu   | Mon 7:15-8:15 PM                                                             | On request                     | Join now |
| <b>C</b>   | Spencer Kiper                           | skiper@reach.edu     | Tue 6:00-7:00 PM                                                             | On request                     | Join now |
| <b>D</b>   | Art Lopez                               | alopez@reach.edu     | Mon 8:30-9:30 PM                                                             | Tue 5-6 PM                     | Join now |
| <b>E</b>   | Jeanine Masciola                        | jmasciola@reach.edu  | Tue 7:15-8:15 PM                                                             | On request                     | Join now |
| <b>F</b>   | Zahra Razi                              | zrazi@reach.edu      | Wed 6:00-7:00 PM                                                             | Wed 7:00-8:00 PM<br>On Request | Join now |
| <b>G</b>   | Justin Steele                           | jsteele@reach.edu    | Wed 7:15-8:15 PM                                                             | On request                     | Join now |
| <b>H</b>   | Stacy Dortch                            | sdortch@reach.edu    | Thu 6:00-7:00 PM                                                             | On request                     | Join now |
| <b>I</b>   | Ying Chen                               | ychen@reach.edu      | Mon 6:00-7:00 PM                                                             | On request                     | Join now |
| <b>J</b>   | Stephanie Thompson                      | sthompson@reach.edu  | Thu 6:00-7:00 PM                                                             | On request                     | Join now |
| <b>K</b>   | Elise Barton                            | ebarton@reach.edu    | Thu 7:15-8:15 PM                                                             | On request                     | Join now |
| <b>L</b>   | Justin Steele                           | jsteele@reach.edu    | Wed 6:00-7:00 PM                                                             | On request                     | Join now |
| <b>M</b>   | Irene Nolan                             | inolan@reach.edu     | Mon 7:15-8:15 PM                                                             | Wed 7:15-8:15PM                | Join now |
| <b>N</b>   | Stephanie Thompson                      | sthompson@reach.edu  | Tue 6:00-7:00 PM                                                             | On request                     | Join now |
| <b>O</b>   | Ying Chen                               | ychen@reach.edu      | Weds 6:00-7:00 PM                                                            | On request                     | Join now |
| <b>P</b>   | Irene Nolan                             | inolan@reach.edu     | Mon 6:00-7:00 PM                                                             | Wed 6:00-7:00 PM               | Join now |
| <b>Q</b>   | Spencer Kiper                           | skiper@reach.edu     | Tue 7:15-8:15 PM                                                             | On request                     | Join now |
| <b>R</b>   | Wiley Brazier                           | wbrazier@reach.edu   | Wed 7:15-8:15 PM                                                             | On request                     | Join now |
| <b>S</b>   | Elise Barton                            | ebarton@reach.edu    | Thu 6:00-7:00 PM                                                             | On request                     | Join now |
| <b>All</b> | Emily Thomforde,<br>CS Department Chair | ethomforde@reach.edu | Fri 5:00-7:00 PM Optional weekly<br>drop-in Coding Clinic for all candidates |                                | Join now |



### **Course Description**

This course introduces candidates to core concepts and practices common to state and national standards for computer science. It aims to build teacher self-efficacy and pedagogical content knowledge through hands-on investigations of Computing Systems, Data and Analysis, Networks and the Internet, Algorithms and Programming, and Impacts of Computing. It fulfills the Computer Science Competencies for Elementary Teachers, Grades K-6, required by the Arkansas Teaching Standards, and is aligned to state and national standards for computer science.

### **Applied Requirements**

None.

### **Corequisite**

None.

### **Readings/Textbooks/Materials Required for Course**

All materials will be provided in digital format through Canvas.

### **Candidate Learning Outcomes**

Upon successful completion of this course the candidate will be expected to:

- Write computer programs confidently in at least one block-based programming language
- Identify best practices in CS pedagogy: collaboration, communication, and inclusion
- Connect CS concepts and practices to identity, culture, and society
- Meaningfully access further professional development in CS

### **Objectives for Course Completion**

Upon successful completion of this course the candidate will be expected to:

- Identify the CS concepts and practices within a provided lesson plan or curriculum
- Differentiate a CS lesson plan based on Universal Design for Learning (UDL) principles
- Apply culturally responsive and sustaining pedagogical strategies to CS teaching and learning

### **BA Degree Program Learning Outcomes (PLOs) Addressed in Course (EX)**

| Program Learning Outcomes                                                                                            | Level it is Addressed |
|----------------------------------------------------------------------------------------------------------------------|-----------------------|
| 2. Understand and address issues related to equity and social justice.                                               | [D]                   |
| 6. Demonstrate occupational and job-specific competencies including professionalism, ethics, and content integration | [I]                   |

### **Course Access**

#### *Online Engagement*

This is a distance education course with synchronous meetings. Learning will be through synchronous and asynchronous online engagement, including virtual classroom meetings, assignments and readings on the Canvas platform. This course is NOT self-paced; synchronous meetings have been purposely scheduled to allow enough time for candidates to complete module-specific asynchronous activities and



assessed assignments. There are due dates for all asynchronous tasks and assignments. The course is organized to maximize candidates' involvement in the learning process and individual skills development.

Virtual, synchronous meetings will include a review of any asynchronous activities set during the session prior with the objective of clarifying and highlighting areas of special significance. Each class involves active learning where candidates fully participate with each other and facilitators on paired, small and larger group exercises, demonstrations and discussions. candidates must come prepared for synchronous sessions, which may include reading materials and independent reflection exercises that have been set as their asynchronous activities.

Work will be done through the online Learning Management System, Canvas. On Canvas, candidates will read, reflect, submit assignments and collaborate with fellow candidates. Candidates will need access to the following technology: Internet Connection with current versions of Flash Player Adobe Reader and Quicktime, access to a computer with a speaker and microphone for participation.

### **Technology Requirements**

- Web Access -
  - Chrome 62 and 63
  - Firefox 56 and 57 (Extended Releases are not supported)
  - Flash 27 and 28 (used for recording or viewing audio/video and uploading files)
  - Internet Explorer 11 and Edge 40 and 41 (Windows only—please make sure your operating system is also current as noted in the Canvas computer specifications lesson; you may need to download the Windows 10 Anniversary Update to submit Canvas assignments)
  - Safari 10 and 11 (Macintosh only)
- Computer with “up-to-date” enough technology that enables you to be “be seen, be heard, and to communicate, which includes:
  - Face camera (so you can be seen)
  - Microphone (so you can be heard)
  - Fully keyboard access (for typing in chats and participation in individual and small group assignments)

### **Technology Expectations for Synchronous sessions and Virtual Classroom**

Computer Science classes require participation in Zoom using a computer (not a phone.) It is the candidate's responsibility to ensure that they are at a location that has a) adequate internet; b) no distractions and c) equipment with camera and microphone to participate in synchronous sessions.

In the case of technical difficulties, candidates must join through the phone in-call option and must notify their facilitator as to why they need to call in. It is the candidate's responsibility to follow up on what the issue is and to work with the facilitators to fix it before the next synchronous session.

### **Other Synchronous Session Expectations and Netiquette**



### **Reach uses the Tutorial Method**

The tutorial method is a deep learning methodology that develops inquiry and real-world problem solving through small group conversations where the instructor facilitates question-based discussion with a small group of candidates. Basically, the tutorial method teaches **how to think and not what to think**.

#### The tutorial method process:

- The tutorial method is built into the schedule of the class - it is a fundamental learning component of this course.
  - The instructor sets a prompt in the form of an open question or a problem/equation to solve, related to the subject being studied.
  - candidates have a set timeframe to respond to the prompt in preparation for the tutorial session. This involves independent research, writing, or application in/from the field.
  - The instructor reviews the work and provides feedback.
  - Small groups of candidates meet in the tutorial session(s) with the instructor – meaningful peer feedback is also expected.

--modified from the Centre for Tutorial Teaching]

**Minimize Distractions:** candidates should pick a location that is quiet and where there are minimal to no distractions. Children should not be sitting in on synchronous course meetings. Topics and interactions in synchronous sessions might not be appropriate for young children to overhear or witness. Also, as a community of learners, observers (including adult children, roommates, partners or others in your household) can impact the comfort of others in the group. candidates should avoid having people sit in at all times.

If candidates are meeting in a coffee shop or some other location with internet access, they should try to find a secluded space where they can speak freely and fully participate in synchronous sessions.

**Participation:** OTA at Reach courses utilize active learning to make synchronous course work meaningful to the participants. Active learning requires ongoing participation. *Oxford Teachers College requires minimum 90% attendance and participation in synchronous sessions, asynchronous tasks, and assignments. Chronic or excessive lateness or phoning in (face not visible) may be considered an absence. If a student misses in-class Tutorials or credit-bearing conversations, this may result in points that can not be made up. This is at the discretion of the professor.*

**Collaboration:** Candidates will be expected to share their screen on Zoom for pair programming and live demo activities. Please notify the instructor at the beginning of class if you are unable to screen share and accommodations will be made.

**Preparation for Courses:** Candidates must complete the relevant asynchronous activities and assignments in advance of a module's synchronous session, according to the instructions and deadlines outlined on Canvas. **In general, each week there will be one Read/Watch assignment and one coding assignment due before class. While there is no point penalty for submitting these assignments after the relevant class, candidates are expected to engage with the materials or activity in sufficient capacity to be able to discuss it during the synchronous session.**



**Respectful Interactions:** Candidates should be respectful of the opinions and backgrounds of others. candidates are expected to comply with ethical online code of conduct, or “netiquette,” as depicted at <http://www.albion.com/netiquette/>.

**Confidentiality:** Use pseudonyms or nicknames when discussing children and families (in written and oral communication.)

**Work Quality and Deadlines:** Candidates are expected to complete all assignments as noted in the schedule in the syllabus. It is recommended that candidates refer to OTA at Reach Academic Integrity Policy for information on academic dishonesty. Candidates must discuss with the facilitator any situations, issues, and problems that directly impact their ability to participate in modules and complete assignments. **Late assignments and resubmissions will be accepted with no point penalty, until the Midterm date for Week 1-6 assignments and until the Final date for Week 7-13 assignments.**

### **Library Access**

The Reach Institute Library is integrated on Canvas, the Learning Management System (LMS). On Canvas, candidates will have direct access to the Reach Library and library resources. To access the librarian, contact [library@reach.edu](mailto:library@reach.edu). The library can also be accessed by the library helpline through the Canvas link.

### **Universal Design**

If candidates feel as if they could benefit from some additional accommodations to be successful in this program due to a disability or learning challenge, they can contact candidate Success Services (SSS). Candidates are encouraged to request accommodations as early in the academic year as possible by completing the Special Accommodation Request Form [in accordance with Reach Institute for School Leadership policy on course accommodations].

### **Assessments/Assignments**

| Frequency | Assessment/Assignment                                     | Points each | Total Points |
|-----------|-----------------------------------------------------------|-------------|--------------|
| 2         | Pre/post Survey                                           | 10          | 20           |
| 11        | Weekly Learning Log                                       | 6           | 66           |
| 11        | Weekly Canvas Discussions                                 | 4           | 44           |
| 10        | Weekly Home Learning Project Documentation and Reflection | 10          | 100          |
| 10        | Weekly In-Class Project Documentation and Reflection      | 10          | 100          |



|   |                      |                     |            |
|---|----------------------|---------------------|------------|
| 1 | Summative Assessment | 20                  | 20         |
|   |                      | <b>Course Total</b> | <b>350</b> |

### Grading and Credit

Percentage Grades – calculated out of the total points in the class. *To calculate your grade, take the points you have in the class and divide it by the total points possible in the class, then multiply that number by 100 to get your percentage/letter grade.*

| Passing Grades |          |          | Failing Grades |          |          |
|----------------|----------|----------|----------------|----------|----------|
| A              | 100      | to 94.0% | D+             | < 70.0 % | to 67.0% |
| A-             | < 94.0 % | to 90.0% | D              | < 67.0 % | to 64.0% |
| B+             | < 90.0 % | to 87.0% | D-             | < 64.0 % | to 61.0% |
| B              | < 87.0 % | to 84.0% | F              | < 61.0 % |          |
| B-             | < 84.0 % | to 80.0% |                |          |          |
| C+             | < 80.0 % | to 77.0% |                |          |          |
| C              | < 77.0 % | to 74.0% |                |          |          |
| C-             | < 74.0%  | to 70.0% |                |          |          |

### Exceeds Expectation (A – B Grade)

Candidate prioritizes course meetings and coursework as evidenced by rarely missing course meetings, feedback sessions and small group discussion deadlines, engaging fully and genuinely in the process of formative and summative assessment and meets deadlines for course assignments. The quality of assignments submitted is above average, following the exceeds or meets expectation criteria on assignment rubrics. candidate comes to course meetings prepared having read and synthesized course materials and makes substantive contributions to class.

### Meets Expectations (B- – C Grade)

Candidate engages in the process of formative and summative assessment by participating in most to all course meetings, feedback sessions and small group discussion deadlines. Candidate frequently meets deadlines for course assignments and the quality of assignments submitted is above average or average, following the meets expectation criteria on assignment rubrics. Candidate comes prepared to most course meetings having read and synthesized course materials. Candidate shows progress in working towards exceeding expectations in the course.

### Approaching Expectations (C- – D Grade)

Candidate engages in the process of formative and summative assessment by participating in most to all course meetings, feedback sessions and small group discussion deadlines. Candidate infrequently meets the deadline for course assignments and the quality of assignments submitted are below average, following the approaching or insufficient/incomplete progress on rubrics. Candidate is sometimes not prepared in course meetings having not read and/or synthesized course materials. Candidate shows



minimal progress in working towards exceeding or meeting expectations in the course. The candidate has not met expectations for passing this course.

#### **Insufficient/Incomplete Progress (D- or Below)**

Candidate engages insufficiently in the process of formative and summative assessment by failing to participate (often missing) course meetings, feedback sessions and small group discussion deadlines. candidate infrequently to rarely meets the deadline for course assignments and the quality of assignments submitted are below average, following the insufficient/incomplete progress on assignment rubrics. candidate is frequently prepared in course meetings having not read and/or synthesized course materials. Candidate shows little progress in working towards exceeding or meeting expectations in the course. The candidate has not met expectations for passing this course.

#### **Minimum Passing Grade**

A minimum grade of C- (70%) is required to pass CS 300.

#### **Academic Integrity**

Violating academic integrity is considered a serious offense by the college and is treated accordingly. Violation of academic integrity includes, but is not limited to, all of the following: cheating on exams, having unauthorized possession of exams, and plagiarism. Academic dishonesty may result in a failing grade for a particular assignment or exam, a failing grade for the entire course, or suspension or expulsion from the college. According to the Reach Institute Academic Honesty & Integrity Policy, plagiarism "...consists of the misuse of published, unpublished, or works of another by claiming them as one's own. Plagiarism may consist of handing in someone else's work as one's own, copying or purchasing a pre-written composition and claiming it as one's own, using paragraphs, sentences, phrases, words or ideas written by another without giving appropriate citation..." For more detailed information, visit the Reach Candidate Handbook.

#### **Use of Generative Artificial Intelligence**

The Academic Integrity Policy extends to AI-generated text, images, and code. You are permitted to use AI tools just as you use any other external resources, including texts, videos, and conversations with peers and others, as long as you do not present them as your own work. If you have used ChatGPT, Gemini (Bard), Midjourney, or any other AI-based generative tool, you must cite the tool, date of access, and link to a transcript of the entire interaction. Chat and audio transcripts are not saved by default, so it is **your responsibility** to record them. If appropriate citation is not provided, the instructor may require further documentation, or resubmission of the assignment, at their discretion.

Example citation: Image generated by Dall-E Mini 4/22/24 [session transcript](#)

#### **Title IX Statement**

Reach University is committed to maintaining a safe and caring college environment. Reach has established policies and procedures regarding Sexual Misconduct, Harassment, and Assault. For more detailed information, visit: The Reach Candidate Handbook.

#### **Course Schedule (EX)**



Below are key dates for course meetings and assignments with readings. *Readings are due before the course meeting date unless otherwise noted.*

Note: Dates below are accurate for Monday sections. Tuesday, Wednesday, and Thursday sections may have their Flex and Midterm weeks on different days. The Flex week consists of a special asynchronous assignment (no class meeting) and is timed to coincide with 2024 University holidays:

Mondays: May 27 (Memorial Day)

Tuesdays: Instructor's choice

Wednesdays: June 19 (Juneteenth)

Thursdays: July 4 (Independence Day)

| Week of         | Topic             | Tutorial Question of the Week          | Read/Watch                                                                                                                                                                                                                                                                                     | Assignments Due                                                                |
|-----------------|-------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| May 13          | Welcome to CS 300 | Why do you need to know CS?            | 1 <a href="#">Computer Science is Changing Everything</a><br>2 <a href="#">Agency by Design Oakland Ignite Talk: Kennan Scott</a>                                                                                                                                                              | 1 Pre-survey ( <a href="#">TBaCCT</a> )<br>2 CS Hero Poster                    |
| May 20          | CS and Feelings   | What does computer science feel like?  | 1 <a href="#">Learning with an Emotional Brain</a><br>2 <a href="#">The Power of Social Emotional Learning and Computer Science</a><br>3 <a href="#">Pair Programming</a>                                                                                                                      | 1 Zig Zag in Moana, Run Marco, or Lightbot<br>2 Feelings Story with Sprite Lab |
| May 27 <flex>   | CS and You        | How do you identify as a CS teacher?   | 1 <a href="#">How to be a Lead Learner</a><br>2 <a href="#">The PRIMM Approach</a><br>3 <a href="#">Tackling Novice Learners' Naive Conceptions in Introductory Programming</a>                                                                                                                | 1 Record a teaching demo                                                       |
| June 3          | CS and Identity   | Who is computer science for?           | 1 <a href="#">Teach Us Your Name</a> OR <a href="#">My Name is a Story</a><br>2 <a href="#">Identity Markers and Equity in CS</a> OR <a href="#">Why the Self is Important in Computer Science Education</a><br>3 <a href="#">Duke Science and Technology: An Algorithm for a Better World</a> | 1 CS First<br>2 Animate a Name                                                 |
| June 10         | CS and Language   | How do we communicate about computing? | 1 <a href="#">TIPP &amp; SEE</a><br>2 <a href="#">Computational Action &amp; Translanguaging in CS Education</a><br>3 <a href="#">Read Before you Write</a>                                                                                                                                    | 1 All About Me<br>2 I Speak Scratch                                            |
| June 17         | CS and Community  | Who owns art?                          | 1 <a href="#">Teaching Kids about Copyright</a><br>2 <a href="#">How Moral is your Machine?</a><br>3 <a href="#">AI, Monkeys, and Copyright</a>                                                                                                                                                | 1 What on Earth is that?<br>2 Parts of a Computer                              |
| June 24 midterm | CS and Friends    | What is a hackathon?                   | Optional:<br>1 <a href="#">How Children Make Digital Projects</a>                                                                                                                                                                                                                              | no assignment (midterm)                                                        |



|         |                  |                                                   |                                                                                                                                                                                     |                                                                                                  |
|---------|------------------|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
|         |                  |                                                   | 2 Hackathons Made Simple<br>3 <a href="#">Coding and 21st-Century Skills</a>                                                                                                        |                                                                                                  |
| July 1  | CS and History   | What is a computer?                               | 1 <a href="#">What makes a computer a computer?</a><br>2 <a href="#">How Does This Work?</a><br>3 <a href="#">The Computer and Turing</a>                                           | 1 High Score<br>2 Area & Perimeter                                                               |
| July 8  | CS and Mindsets  | What strategies set you up for success in coding? | 1 <a href="#">Code.org: How to Debug</a><br>2 <a href="#">Teacher Tips: Help with Debugging</a><br>3 <a href="#">Levels of Abstraction</a>                                          | 1 Saimon's Game<br>2 Debugging Clinic                                                            |
| July 15 | CS and Reading   | How is CS linked to literacy?                     | 1 <a href="#">Scaffolded Reading in Computing</a><br>2 <a href="#">Tech Barbie's Backstory</a><br>3 <a href="#">Encoding Literacy in Computer Science</a>                           | 1 <a href="#">Chase the Pizza</a> or <a href="#">Long Live Wakanda</a><br>2 The Game of the Book |
| July 22 | CS and the Earth | What are the environmental impacts of computing?  | 1 <a href="#">Why turning to cloud storage is actually bad for the environment</a><br>2 <a href="#">AI and Water</a><br>3 <a href="#">Does Upgrade Culture Need an Upgrade?</a>     | 1 Tech Habits Data Collection<br>2 Data Visualization with p5.js                                 |
| July 29 | CS and Future    | Will robots take our jobs?                        | 1 <a href="#">What is AI?</a><br>2 <a href="#">Wendy's tests an AI chatbot</a> OR <a href="#">Carl's Jr. AI Drive-Thru Experience</a><br>3 <a href="#">Will Robots Take My Job?</a> | 1 <a href="#">AI for Oceans</a><br>2 Teachable Machine                                           |
| Aug 5   | CS and School    | How will you take CS forward?                     | 1 <a href="#">Universal Design for Learning Guidelines + Computer Science / Computational Thinking</a><br>2 State Standards                                                         | 1 Final Project: TEC Rubric for a lesson plan of your choice<br>2 Post-survey                    |

### National Institute for Excellence in Teaching

In Spring of 2003, Oxford Teachers College solidified partnership with the National Institute for Excellence in Teaching in order to align courses, applicable job-embedded practices, and the instruction/coaching/observation cycles of the Clinical Residency Year with with a robust, research-based instructional tool: The Aspiring Teacher Rubric.

The NIET Aspiring Teacher Rubric provides a streamlined set of performance indicators to be used with teacher candidates to define effective instruction. These 12 indicators describe the key skills and abilities that aspiring teachers must have to be prepared for the classroom. The descriptions within NIET's Aspiring Teacher Rubric create common language for observation, feedback, and support as well as foster collaboration between an aspiring teacher and peers or faculty around instructional practices. The vision represented within the rubric maximizes instructional excellence and correlates with student achievement.