

Teaching Statement

Ebuka Philip Oguchi

My teaching approach focuses on creating a vibrant, diverse classroom that gives students the tools they need to become critical thinkers, practical problem solvers, and conceptually competent cybersecurity students. I have created a multimodal strategy to keep students interested and encourage efficient learning using my background as a teaching assistant and lab assistant for the University of Nebraska-Lincoln's Cryptography & Security course (CSCE 477/877).

Teaching Approach: Learning STEM subjects—especially cybersecurity—requires active participation and practical practice. To accommodate different learning styles and encourage in-depth comprehension, my teaching approach combines a variety of instructional and evaluation methods.

Course Structure: I intend to organize courses into modules with specific learning objectives. This modular design allows for greater pacing flexibility while also maintaining student focus. Each module will begin with extensive topic explanations, followed by activities to reinforce learning, check comprehension, and encourage critical thinking.

Active Learning: I plan to use a flipped classroom style, where students study assigned materials and take pre-class tests. This technique frees up classroom time for in-depth discussions and collaborative activities. In-class sessions will begin with a quick introduction of essential ideas, followed by interactive exercises encouraging the application and examination of the information.

Technology Integration: To increase student participation and streamline assessment, I intend to use online platforms like TopHat to provide real-time feedback during class. This tool allows me to assess student comprehension and quickly fix misconceptions. I will also use Piazza as an online platform to stimulate student inquiries and conversations outside class hours, establishing a continuous learning atmosphere.

Practical Application: Having organized experiments and laboratories for the Cryptography & Security course, I understand the value of hands-on learning in cybersecurity education. I will create projects and lab activities requiring students to apply theoretical concepts to real-world circumstances, improving their problem-solving abilities and practical grasp of cybersecurity principles.

Assessment Strategy: My assessment strategy will be varied, encompassing in-class activities, homework assignments, projects, and tests. I will create two types of tasks: shorter ones that must be completed after each module and larger, integrative assignments that span numerous topics. The projects will be designed to challenge students with real-world implementations of cybersecurity principles. Examinations will incorporate a variety of knowledge, application, and synthesis tasks to measure student comprehension holistically.

I will meet with students during office hours to discuss their particular concerns. I'll use student feedback to improve my teaching methods and material delivery. In addition, I will design tests based on student evaluations of in-class activities, assignments, and projects. To conduct a more formal examination, I will employ concept inventories where they are accessible. The end course feedback will help me improve the course material and activities for future offerings.

Mentoring Approach: Mentoring graduate and undergraduate students is an important part of my role as an educator. I will help graduate students develop autonomous research abilities by introducing them to broad issues in cryptography and cybersecurity and guiding them through relevant

literature. I'll challenge students to recognize the real-world significance of research challenges and use theoretical and experimental methodologies to solve them.

To help students improve their communication skills, I will arrange frequent research group meetings where they can share their work or debate current research on the subject. I will offer constructive feedback on their presentations and encourage peer feedback to extend their viewpoints.

Furthermore, I will urge students to tackle problems using theoretical and experimental approaches. Theory helps us comprehend our solutions' underlying boundaries while identifying their qualities. Experimental validations, on the other hand, assist students in verifying their theoretical conclusions and identifying any omissions in the theoretical models.

Student activities include submitting articles to peer-reviewed publications and conferences and preparing and delivering presentations. I will help students conceptualize and present their study in a straightforward manner. Writing feedback will be offered iteratively. Initially, I will offer high-level feedback to help strengthen the communication of the ideas. I will provide more thorough feedback in subsequent iterations to help them display their work better. To help students improve their presenting skills, I will organize weekly meetings with my research group where they will present the state-of-the-art on the topic she/he is working on. I'll encourage other students to give feedback and ask questions. This will allow them to broaden their perspectives and find a better answer.

I will also provide feedback for the presentations to help them improve their art of expression. I will also arrange weekly sessions with individual students to track their development. These conversations will assist students in overcoming any hurdles in their approach.

Teaching Interests at the University of XXXXXX: I am well prepared to teach courses in various areas. In undergraduate courses, including cybersecurity (e.g., XXXXX), networking (e.g., XXXXX), algorithms (e.g., X), data structures (e.g., XXXXXX), and programming (e.g., X). In graduate courses, including cybersecurity (e.g., XXXXX), networking (e.g., XXXXX), algorithms (e.g., X), data structures (e.g., XXXXXX), and programming (e.g., X). Furthermore, I would like to develop a new course to introduce state-of-the-art research in wireless security. I believe undergraduate and graduate students can benefit from this course by expanding their knowledge and skills in cybersecurity, networking, and wireless.

My teaching methodology focuses on active learning, practical application, and critical thinking. By leveraging technology, encouraging hands-on experiences, and cultivating an inclusive learning environment, I hope to prepare students for the challenges and possibilities that await them in the constantly changing physical layer and cybersecurity fields.