

Ahmad Al-Doulat

9233 Glenwater Drive, Charlotte, NC, 28262

Phone: (704) 499-7992 | Email: adoulat@uncc.edu | Website: <https://webpages.uncc.edu/adoulat/>

Personal Statement

Reflecting on my education experience, I came to understand the needs of students through my own learning experiences; developed ideas for teaching through mentoring; and developed my own teaching strategies through direct teaching experiences with active learning, using flipped classroom models of education.

Learning experience

Since entering the Department of Software and Information Systems at the University of North Carolina at Charlotte, I started gaining learning experience in preparation for a future faculty job. I have served as a Teaching Assistant (TA) for various courses at both undergraduate and graduate levels. The undergraduate course where I served as a TA two times is Web-Based Application Development. I also served as the TA for the graduate course Applied Databases. My duties for these courses include giving discussion lectures, designing homework problem sets, grading homework and exam papers, and holding office hours.

Mentoring experience

A question I took into consideration was how does a graduate student gain the experience required to be competitive for academic positions, while only focusing on their dissertation research? Fortunately, I was able to work as a teaching assistant (TA) and had many opportunities to mentor undergraduate students during my doctoral studies. I do not believe the role of TA is limited to assisting a professor and helping with grading; a TA acts as a bridge between students and professors. A TA can identify the difficulties students experience during the learning process and give direct help so that they can solve and overcome these issues. One of the most important things I have learned during my years as a TA is that the same standards should not be applied to all students. Students should have different starting points because they differ in personalities, characteristics, and abilities. It is important for students to acquire knowledge, but it is equally important to appreciate their sincerity and eagerness to learn. There is a tendency to assess students based on their submitted end products and final report, but it is important to place value on the process rather than the results. My university is pushing to increase the number of undergraduate students engaged in research. Undergraduate students have a chance to practice designing and running experiments, analyzing data and drawing a conclusion, making informed decisions and justifying them with evidence, collaborating, and communicating. I considered how to most effectively mentor undergraduate students, while maintaining the required teaching and research productivity and realized that a weekly learning goal should be set high, but also set at an achievable level shared by the students. I also realized that I should not make the mistake of applying my expectations to the students. I developed a variety of skills during this period, including how to give the correct number of appropriate tasks each week, help students solve the task on their own, provide an appropriate solution when problems occur, set the overall goal, and manage the schedule to ensure that students achieve this goal.

Teaching methodology

Reflecting on my teaching experience, my teaching philosophy in CS Education has been greatly influenced by my mentors. My supervisor has developed strong pedagogies for flipped classroom teaching, with the goal of switching to this model of teaching, to provide learning activities that engage students with the material through more hands-on experiences and connect with other students. A flipped, or inverted, classroom teaching method has two main components: deliver instructional content outside of the classroom (typically online) and move active learning into the classroom. These two components open up four instructional design challenges: how to structure the student's preparatory work; how to deliver the instructional content out-of-class; how to design active learning activities to use in class to promote learning, identify misconceptions and allow students to practice critical skills; and finally, how to structure student interaction to maximize social learning and peer instruction. From adopting a flipped-

classroom approach, strategies for these four instructional design components are varied and flexible. The concept of a flipped class is the best way to realize my teaching strategies.

Teaching experience

I have taught the Applied databases course as the main instructor for one semester for graduate students. Also, I have taught a Network-Based Application Development course as the main instructor for two semesters for graduate students. The strategies I value most while teaching, based on the experiences mentioned above, are as follows: Constantly communicate with students. It is important to provide students with sufficient challenges. However, constant communication and interaction with the students are necessary to ensure that they stay on track in class and are aware that they are adequately supported. When teaching, I pay weekly visits to each group to discuss ideas freely, as well as to assess the progress of the project. This process provides me with a direct understanding regarding issues such as elements the students may have misunderstood their complaints about class, and the difficulties they are experiencing. Based on the overall feedback from the students, I can plan supplementary lessons, hand out quizzes, conduct one-on-one discussions, or suggest other solutions for addressing their specific needs. Constantly stimulate the thought processes of students It is essential to diligently prepare audiovisual materials with engaging content for each class to capture the attention of the students. On several occasions during my teaching career, I have witnessed how an image containing a compelling message naturally induces lively discussion among the students. As a professor, I am determined to invest considerable time in preparing class materials that students will find meaningful and memorable, providing an environment for student collaboration and aiming to create learners who are connected with their peers, their purpose, and their profession. Since learning is the process of creating new information based on my existing knowledge, it requires the active participation of the learner. Therefore, instead of passive learning, which involves students listening and memorizing well-summarized information in the classroom, it is crucial to induce active learning where students are encouraged to thoroughly consider and ask new questions while solving problems and applying these solutions effectively. Refrain from being too strict Imposing unnecessarily strict rules on students can result in a loss of efficiency. Absolute standards, instead of relative standards, should be employed along with an understanding of each student's abilities. Furthermore, it is critical to provide students with a variety of ways to accumulate their grades. A professor should recognize and thoroughly understand the differences between students regarding their abilities, interests, experiences, and preferred methods of learning, which enhance the efficacy and management of group activities. Assessment is inherently biased and seldom fully captures the strengths and weaknesses of students. I frequently conduct reflection surveys to better understand the students' backgrounds, interests, and learning styles. Also, I organize the project groups differently based on the reflection survey results. For example, greater synergy and improved results are often achieved when the higher-performing students are grouped together while forming another group with those requiring more support. Consequently, teachers must possess the necessary skills for harnessing the strengths and weaknesses of the students and apply them to their classes in a positive way.

Courses I can teach

- Human-computer interaction (HCI): Teaching HCI techniques along with the human-centered design methods for and importance of the design and evaluation of human-computer interfaces for software systems. The topics covered include the processes of need-finding, early prototyping of interface designs, and evaluating and improving a design.
- Applied databases: Teaching the basic knowledge of modern databases. It covers two modules: a relational database and XML technologies. Through this course, students are able to represent relational databases in the ER model, query the data using the formal query language SQL, and use XML technologies to store and display data. The course contents include Relational databases with MySQL, ER Model, Extended ER Model, SQL, database normalization, query processing and optimization, and metadata representations with XML, XML Schema, XSLT, XPath, and XQuery. Students will learn the concepts of relational databases, how to apply the ER model or Extended ER model to real-world problems, how to write SQL commands to manipulate or retrieve data in the relational database, how to tune database performance and optimize queries, how to analyze real-world business rules, how to design and evaluate functional and efficient relational databases, how to convert a dataset into XML format, how to apply data schemas and styles to

XML data, how to write XPath or XQuery statements to retrieve XML data, and how to create an XML database.

- Network-Based Application Development: Teaching the issues related to network-based application development. The topics include for this course include an introduction to computer networks, web technologies, and standards, network-based programming methodologies, languages, tools, and standards. Students will learn protocols that support computer communication networks, network-based programming methodologies, languages, tools and standards, the design and development of an end-to-end network-based application, and create web-based artifacts with practical, personal, or societal intent. In this course, the students have the option of choosing from two tracks for this course. One track is Java-based that is centered around web application development using Servlets and JSP packages running on the Tomcat Apache server. The second track in JavaScript-based using the Node.js server environment.
- Web-Based Application Development: Teaching basic concepts for developing interactive web-based applications; including HTML, client-side scripting, server-side scripting, user interface design considerations, and system integration considerations. Students will learn HTML, CSS, javascript, and jquery. Students will gain experience in designing and implementing working prototypes of web pages, web sites, and interactive dynamic web-based applications.
- In addition, I would teach other courses according to the department's needs.

Sincerely,
Ahmad Al-Doulat