

ACM-TAMUK
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ACM-TAMUK was founded in 2016. We currently have one faculty advisor and 24 student members; 22 computer science majors and two electrical engineering majors. There are 1126 computer science and electrical engineering students at the Frank H. Dotterweich College of Engineering at TAMUK. Our chapter strives to create a hands-on experience for our members by involving each individual in at least one project per semester. These projects include web development, UAV/drone building, community service, and so much more.

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As technology has become increasingly pervasive in society, the demand for computer programming skills has increased. Unfortunately, Computer Science is only taught in a minority of high schools in the United States. According to the National Science Foundation, only 2,100 out of 42,000 (5%) high schools in the U.S. were certified to teach the AP Computer Science course in 2011. In 2015, only 48,994 students took the Computer Science AP exam, compared to 527,274 who took the English Language exam, and 67,784 who took the European History exam.

At Texas A&M University-Kingsville, one of the primary goals of our student chapter was to help solve the critical problem of lack of Computer Science education at the higher and secondary level. Academy High School, a high school in Kingsville, TX, reached out to us earlier this year, asking for our help for their upcoming Computer Science UIL competition. The Computer Science UIL competition is a Java-based programming competition with both a programming and written section.

Our organization faced a significant challenge. The District competition was less than two months away, leaving us little time to coach the students. Moreover, Academy High School had no Computer Science class. The six students who had gathered to participate in the competition had all been self-taught. Some students had been programming in Java for years, while others had written no more than one hundred lines of code.

Over the next two months, a team of five members from our organization created a "crash course" in Java- covering everything from while loops, to big O notation, to inheritance. In order to prepare, we studied previous UIL written tests, identifying common topics and noting the relative importance of each topic on the test. During our first meeting with the students, we administered a short assessment test that covered each major topic. Based upon the results of this test, we were able to identify the "problem topics" which our students struggled with. This helped shaped our lesson plan. We met weekly with our students, covering 2-3 lessons each session, and providing them homework consisting of 30 questions covering the current lessons.

In the District competition, our students placed 1st, 2nd, 4th, and 6th. Their excellent scores qualified them for the Regional competition. Before the Regional, our team reviewed the test that our students had just taken- identifying and solving any problems which had given them trouble on the exam. Additionally, we squeezed in some advanced Java topics to give them a competitive edge in their next exam. In three weeks, they were off to the Regionals. Unfortunately, while our students did well (the highest score was a 85), they barely did not qualify for State.

In describing his work with our students, of one our members stated that it was the "highlight of his week." The students involved greatly appreciated our collaboration with them. Our organization plans to make this collaboration a tradition- and perhaps Academy the will qualify for State next year!