

## MASTER SCIENCE TEACHER EDUCATION PROGRAM

### Master's of Education in Curriculum and Instruction with **A Major in Science Education**

#### Goals, Objectives, and Assessment

##### ***Goals of the Program***

The challenge has never been greater than today to create a scientific literate society in the Greater Houston Metropolitan Area. The population of this region of Texas is growing with all major school districts struggling to provide classroom space and qualified teachers for their students. The cultural and economic diversity of school-age children range widely. Many children need early schooling, after school assistance, tutorial work, mentoring, and special programs in order to help them acquire the most basic skills to advance through the grades. Further, a large segment of society in the Gulf Coast Region of Texas is mobile. Consequently, many students enter and leave school throughout the academic year, which is disruptive to their learning and socialization.

All of these students need to learn about science and technology in order to function as useful citizens and to understand the natural, mechanical, and electronic world in which they live. In addition to the economically disadvantaged students, there are students from more affluent families, who come to school with many skills and experiences, and need to be challenged academically with a rigorous science program. How do we prepare science teachers to educate a student population with such diverse backgrounds and needs?

Those who teach science in this large urban setting must be very knowledgeable about the cultural diversity, economic status, and special needs of their students. Without this knowledge optimal learning cannot occur. These teachers need to be knowledgeable about their students' background and how prepared they are for learning science. Further, today's science teachers must understand science in order to create learning environments that engage students, causing them to master core content, comprehend the nature of science, and to recognize the relationships between science, technology, and society. These educators need to become ***master science teachers***, who are recognized for helping students to appreciate science, to learn about the natural world, and to answer science/societal questions. Further, they need to be visible in professional organizations and to be recognized leaders in their school and district for curriculum development activities.

How does one become a master science teacher, practicing his/her profession in a large urban area? This expertise requires an educator who:

- has developed an in-depth knowledge of school science topics,
- understands the nature of science and inquiry,
- uses technology to enhance learning,
- demonstrates how to deal with cultural and economic diversity,
- possesses a working knowledge of constructivism and conceptual change approaches to teaching and learning science,
- is familiar with the Texas Essential Knowledge and Skills,
- has analyzed the national science education reform documents,
- is committed to the reform recommendation to cover less subject matter and study ideas in great depth, and
- demonstrates leadership in science education in his/her school, district, and community.

##### Degree Program Objectives

In order to develop the knowledge, skills, and attitudes necessary to become a master science teacher, who