

## **Gadsden State Aquaculture Education and Development Center Program Summary 2012**

The Aquaculture Education and Development Center (AEDC) at Gadsden State Community College (GSCC) is a unique program that focuses on technical training and experience for students interested in aquaculture, aquarium science, marine biology, fisheries, and environmental science. Students learn through hands-on experiences, traditional classroom instruction, technology enhanced learning, work experience, community and K-12 interaction, and internships throughout the US and abroad.

The 26 acre AEDC has aquaculture production, classroom, and support facilities that rival those of large university programs. The facility has 13 aquaculture production ponds (12 acres of water), a large indoor hatchery, a spacious classroom, a greenhouse with a green water production system, a large dry lab, an environmentally controlled wet- lab for zebra fish research, and a large enclosed barn. The facility also has a dedicated community fishing pond with wheel chair access, a picnic pavilion and 100 fishing poles. The AEDC is a working aquaculture farm that breeds and cultures 8-10 different species of fish and crustaceans annually. Students are responsible for assigned weekly animal care, water quality, maintenance, renovation, and construction. Student involvement and investment in the program and its facilities is key to student success and retention.

GSCC offers two degree options for AEDC students that serve a wide variety of interests and career goals. The Aquaculture Technician Certificate is a 27 credit hour program that allows students to enter the work-force in three semesters. The 64 credit hour Associates Degree in Aquatic Biology allows students to transfer into university programs under a wide variety of related majors. The AEDC curriculum offers four content courses to deliver classroom and lab experiences and two practicum courses that allow students to acquire work experience. The curriculum is designed to address unifying biological concepts in limnology, aquatic ecology, water chemistry, aquaculture, and aquatic animal husbandry and then to reinforce knowledge with practical skills and experience. In addition to traditional instruction, courses utilize the Black Board online learning platform to deliver course content, assignments, and quizzes. Through required offsite internships, students get paid for real-world work experiences in a wide variety of private businesses, state agencies, aquaculture farms, and public aquariums nationwide and abroad. Students are evaluated by exams, water quality analysis and interpretation, skills tests, and participation in events and activities. Data from skills tests and pre and post testing is used to evaluate both student and instructor success.

The AEDC hosts approximately 1,200 visitors annually for onsite events such as field experiences in biology and aquaculture for visiting K-12 programs, and guided tours for students, administrators, community groups, and school counselors. The AEDC is also an important participant in many community events held offsite where students serve as ambassadors and instructors representing GSCC in college fairs and career days, the Etowah County Water Festival (1,300 4<sup>th</sup> grade students) where GSCC students teach the importance of clean water resources, the Etowah County Farm City Festival (1,400 1<sup>st</sup> grade students) where GSCC students teach the importance of agricultural resources, the Renew our Rivers initiative removing litter from river systems, the Message in a Bottle K-12 Anti-Litter Symposium, and Earth Day at the Birmingham Botanical Gardens.

The GSCC AEDC in partnership with the Alabama Cooperative Extension System (ACES) is a national leader in K-12 aquaculture education. For more than a decade the AEDC and ACES has been training teachers to use aquaculture as a tool to deliver content in biology and mathematics through 5-day workshops held onsite. The program has trained over 350 teachers from 15 different states and then supported those programs by providing curriculum resources and free aquatic livestock. The AEDC routinely sends fish through the mail to programs in Connecticut, West Virginia, Iowa, and North Dakota.

In addition to education and outreach activities, the AEDC also serves as a valuable resource for aquatic livestock, and aquaculture extension. The program handles dozens of calls annually from regional businesses and private pond owners. The program provides over 100,000 aquatic livestock annually to regional aquaculture operations, private businesses, and K-12 programs. Students are encouraged to participate in all onsite and offsite consults and fish deliveries.

The GSCC AEDC serves as an excellent model for student centered learning through involvement and investment in the program, facilities, and community. Students are strongly encouraged to spend free time on the facility and to participate in all events and daily activities. These activities build relationships among students, staff, faculty, and the community. This student involvement and investment is key to developing successful programs, students, and citizens. Students learn to become better stewards of their communities and appreciate the importance of reaching out to others. The students become the strength of the program as they help each other with classes; help the community understand natural resources, and help recruit new students into the program.

The GSCC Aquaculture Education and Development Center has a strong advisory committee comprised of stake holders and partners from the University of Alabama at Birmingham, Auburn University, University of Arkansas Pine Bluff, The University of Southern Mississippi and Gulf Coast Research Laboratory , The Alabama Cooperative Extension System, Alabama Division of Freshwater Fisheries, Tennessee Aquarium, Alabama Power Company, USDA Natural Resources and Conservation Service, Alabama Catfish Producers, Auburn High School, Chambers County Career Technical Center, Aqua services Inc., and Alabama Aquarium and Pond Services. This group serves the program through evaluation of the curriculum, program guidance, public relations, legislative support, and regional leadership at all levels of government, industry, and education. This group is largely responsible for the success of this program. This group firmly integrates this program into the surrounding community, the aquaculture industry, the K-12 educational system, state agencies, and regional universities.