

ASSOCIATE OF SCIENCE SELF STUDY

HORTICULTURE (071)
EASTERN OKLAHOMA STATE COLLEGE

for the Oklahoma State Regents for Higher Education

February 19, 2019

INTRODUCTION

The Horticulture degree program offered by Eastern Oklahoma State College is a two year transfer program designed to provide the general education and introductory major requirements for students seeking a bachelor's degree and eventually careers in horticulture and related fields. The following information contained herein outlines the current status of the effectiveness of the program.

STATE REGENTS POLICY

Centrality of the Program to the Institution's Mission

As published, the mission of Eastern Oklahoma State College is "to provide the educational tools and environment to facilitate student learning through its associate degrees and other academic programs which effectively prepare graduates to enter their chosen vocational field or to continue their educational experience through baccalaureate degree programs. It is also the mission of the College to engage in educational programming and related activities that promote regional economic and community development". Also as published, one of the functions of the institution in order to achieve its missions is "to provide education in several basic fields of university-parallel study for those students who plan to transfer to a senior institution and complete a bachelor's degree".

Eastern's Horticulture program encompasses the mission of the institution by providing a complete, comprehensive associate degree program which allows students who successfully complete the curriculum to enter a four year college or university at the junior level and be competitive with fellow students as they begin to specialize in horticulture and other related curriculum.

Vitality of the Program

Program Objectives and Goals

The program has established clear program goals and objectives. The faculty incorporates the institution's five Student Learning Outcomes for General Education into their curriculum and establishes specific program goals and objectives as they apply to this degree program. Students receive a copy of the student handbook and individual course syllabi to assure they are aware of the college mission, program goals, and course objectives.

Program objectives for the Horticulture program are well-defined and clearly stated. The primary goal of the program is to provide a complete, comprehensive program which includes general education requirements and introductory horticulture courses which would allow the student to successfully matriculate into a baccalaureate program. Specific objectives include:

- To create an appreciation for the profession of horticulture.

- To develop a basic understanding of the art and science of horticulture, its sub-disciplines, and their role in providing the goods and services modern society demands.
- To provide basic knowledge in plant biology and physiology.
- To provide basic knowledge in production and marketing of horticultural crops.
- To provide basic knowledge and experience in greenhouse management and practices.
- To provide students with a knowledge of the various opportunities available in horticulture and its sub-disciplines.
- To create appropriate communication skills.

These program objectives have been derived over time by the horticulture with significant input from recommendations by past graduates, industry professionals, employers of past graduates, and from transfer institutions. The curriculum content, laboratories, problems, etc, has been designed to attain the aforementioned objectives.

Quality Indicators

Multiple tools are used to evaluate the Horticulture program. These tools consist of student evaluation of individual courses, review of student success, analysis of faculty performance, an annual strategic planning meeting of Agriculture faculty and staff members, input from industry professionals, and feedback concerning student success from transfer institutions.

Students evaluate their instructors and the strengths/weaknesses of their courses as a measure of program effectiveness. A standardized faculty evaluation form available through BlackBoard is used by students to evaluate teacher performance. Students evaluate the instructor with 23 items, with an additional optional four items designed by the division. The evaluation also allows students the opportunity to provide written comments. Results of the evaluation are reviewed by the Division Dean and the individual faculty member.

Student success is evaluated through Eastern's assessment program. Eastern's program has shifted over the past several years from a focus on teaching to a focus on student learning. A model has been devised that links outcomes with curriculum, co-curricular activities, assessment methods, and the budget. Student assessment is conducted at three levels: entry level, mid-level, and programs. Entry-level assessment is used to determine appropriate enrollment of new students to ensure student success. ACT scores are evaluated and if any of the sub-scores in reading, English, or mathematics fall below 19, students must enroll in and complete developmental courses in that subject area as required by OSRHE policy. Students placed in developmental course work by ACT scores have the option of taking the ACCUPLACER Test to provide additional entry-level assessment.

Mid-level assessment in the Agriculture program consists of an entrance and exit examination administered at the beginning of the program and upon program completion. Student progress is partially determined from these scores in consideration with ACT scores and GPA.

The Agriculture Division Dean also evaluates faculty member performance to identify strengths and weaknesses and to implement any plans for improvement, if required. The annual evaluation is maintained in the Office of the Dean of Agriculture with a copy provided to the faculty member and a copy forwarded to the Vice President of Academic Affairs.

Each summer Agriculture Division faculty and staff gather off campus for a strategic planning session. The meeting is held at a regional agriculture related entity to provide a professional development opportunity in addition to the planning meeting. At the meeting performance of individual programs and associated activities of the previous academic year are reviewed, goals for the upcoming year are established, and upcoming activities are coordinated. In addition to these pertinent items, staff members are provided with an opportunity to interact with their colleagues in a less formal format.

In addition quality of the program is measured through student success at transfer institutions and subsequent satisfaction of employers with the work performance of graduates of the program. Department faculty are in contact with colleagues at transfer institutions concerning success of transfer students and program curriculum content.

Minimum Productivity Indicators

Enrollment/Headcount:

The number of horticulture majors has been low over the past five years. Continued efforts in recruiting have been made by the department, division, and institution to locate and recruit future students. Initiatives in recruiting non-traditional students are also utilized. Enrollment (Headcount) for the past five academic years are presented in the table below:

Year	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Avg
Headcount	2	2	4	4	2	2.8

While previous enrollments have been below the OSRHE requirements for associate of science degree programs, there are several considerations that indicate a positive outlook for the future of the program. First, the program has developed a relationship with a company providing innovation in aquaponics. This entity shares facilities with the current horticulture program allowing students exposure to this cutting edge production technique. The relationship also allows the sharing of resources.

Secondly, there has been a noticeable increase in the interest of horticulture with the pilot project in the production of industrial hemp and the recent passage of the use and production of medicinal marijuana by the State of Oklahoma. The institution has received numerous inquiries from prospective students and individuals interested in production of these commodities. Currently, the aquaponics entity sharing greenhouse facilities with the institution have initiated projects in the production of industrial hemp and CBD oil. This should result in increased enrollment numbers within the immediate future.

Secondly, there has been a noticeable increase in the demand for graduates of the program. Contacts from prospective employers, particularly from agencies within the federal government and the private sector, seeking qualified graduates have increased significantly. Personnel from several federal agencies have communicated that over half of their workforce is of retirement age and that a shortage of qualified replacements is inevitable. This fact has been emphasized in the recruitment of prospective students to the program.

Finally, this program complements the Forest Technology technical-occupational program offered by the department. Four courses comprising 14 credit hours are taken by students in both programs. These shared courses help increase FTE and improves cost efficiency for both programs.

Degrees Conferred:

Graduates who successfully complete the Horticulture program are provided the knowledge, skills, and abilities required to transfer and be successful at a four year college or university. As outlined in previous sections, success of graduates and the program is monitored in several ways. Communication with transfer institutions provides information concerning the success of transfer students and any changes that might need to be made to the curriculum and/or program. Recommendations from past graduates in industry professionals provide information concerning changes within the profession. This in turn provides the necessary direction for curricular changes. Horticulture faculty are also active members of several professional organizations and come in contact with employers of graduates numerous times throughout the year. Input concerning the success of these graduates, as well as program efficiency, is provided through these contacts.

Four students have graduated from the program over the past five years. A breakdown of those graduates by year is presented in the table below:

Year	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Avg
Graduates	0	1	0	4	0	1.0

Efforts continue by department faculty in the area of student retention and the subsequent completion of degree requirements by students entering the program.

Other Quantitative Measures

Enrollment in Major Courses:

The Horticulture program consists of 23 credit hours of major courses. There are three horticulture specific courses comprising 7 credit hours. The remaining 16 credit hours in the program consist of other agriculture and science courses. Enrollment in horticulture specific courses required in the program for the past five years is presented below:

Course	Year					Avg
	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	
HORT 1113	4	6	8	8	6	6.4
HORT 2112	2	2	2	4	1	2.2
HORT 2212	2	2	2	4	1	2.2

As depicted from the information presented in the table above, course enrollments have remained fairly consistent over the past five years. Several courses have been identified as to be offered on an every other year basis to improve cost effectiveness as long as it doesn't conflict with a student's academic plan and graduation timetable. In addition, agriculture education majors are required to take HORT 1113 in addition to horticulture majors.

Faculty:

Currently there is one faculty member who teaches the majority of the major specific courses within the Horticulture program. In addition to teaching these courses, advising majors, and administering the program, the faculty member also teaches other courses within the agriculture curriculum.

Faculty	Credential	Granting Institution
Kristen Hedge	B. S. Agriculture M. Ed. Education Currently pursuing M. S. Agriculture	Oklahoma State University East Central State University Texas A&M University

Duplication and Demand

While there are other horticulture programs offered at several of the two-year institutions in Oklahoma, Eastern's program is unique in that we are able to provide students with exposure to cutting edge technology in the practice of aquaponics due to our relationship with a company that is recognized nationally for its innovation in the practice. This company has also moved into the organic production of industrial hemp and the subsequent extraction of CBD oil. This has sparked significant interest from prospective students and individuals from across the state. Based on these recent developments the expected demand for the program should increase.

Effective Use of Resources:

Staffing

With current enrollment levels, the program is adequately staffed and administered to meet program objectives, develop occupational competencies of the student, and contribute to the

development of the student's citizenship and social conscience. The Horticulture Department staff consists of one faculty member. This individual administers the program, provides classroom and laboratory instruction, serves as academic advisor, and coordinates with transfer of graduates to the university level. In addition, the faculty member is involved with Agriculture Division activities which includes serving on campus committees, sponsoring student organizations, and coaching judging teams.

The Horticulture Department is housed within Eastern's Division of Agriculture. The department utilizes two state-of-the art greenhouses in the program curriculums. Also, as part of the Agriculture Division the program incorporates the services and benefits of divisional staff and resources. Agriculture staff members who provide services include the Division Dean and an Administrative Assistant. In addition, the Division utilizes a 3,700 acre college farm, which includes 1,700 acres of forest land, administered by the Division Dean and support staff.

Institutional resources available to students include the library and media center, Student Support Services, tutoring, counseling, multiple computer laboratories, physical fitness facility, and on-campus housing. Opportunities available for the student to grow academically, socially, and culturally include Eastern's Student Government Association, college band and choir, theater program, college newspaper, various clubs, and athletic teams for both men and women. Additional opportunities provided by the Agriculture Division include the Aggie Club, Ag Ambassador Leadership program, and agricultural judging teams.

Faculty

Eastern's policy in regards to faculty credentials is for instructors to hold a Master's degree in the area of instruction. If conditions dictate, individuals with a Bachelor's degree may be temporarily employed, provided there is a commitment to complete a Master's degree within three years of initial employment.

The primary faculty member responsible for the forestry programs is Ms. Kristen Hedge. Ms. Hedge was brought on staff this past fall 2018. She holds a B.S. degree in agriculture from Oklahoma State University and a M. Ed. from East Central State University. She is currently pursuing a M. S. Degree in agriculture from Texas A&M University. As chairman of the Horticulture department, Ms. Hedge is responsible for: (1) program administration; (2) instruction; (3) determination of the adequacy of the curriculum; (4) horticulture student academic advisement; (5) horticulture student outcomes assessment; (6) transfer articulation; (7) program recruitment; (8) procurement and maintenance of tools, equipment and supplies; (9) management of the college greenhouse complex; and (10) maintenance of cooperative relations with horticulture industry and professionals.

To maintain and improve the quality of instruction Eastern faculty members are required to participate in professional development activities. This includes, but is not limited to, attending faculty conferences, attending professional conferences related to the faculty members respective field, and membership in professional societies.

Institutional Costs

The educational budget for the 2018-2019 academic year for the Horticulture Department was \$2,900. In reviewing this allocation of funds based on the enrollment in the department's programs and FTE generated, average expenditures were approximately \$453.13/student -or- \$30.21/FTE.

Institutional Program Recommendations

The following recommendations are being made based on results of the comprehensive review of the Horticulture program by faculty and staff members of the Agriculture Division.

1. Continue offering the Associate in Science in Horticulture degree program.
2. Continue recruiting efforts of traditional students with emphasis on expanding into western Arkansas where additional opportunities are located.
3. Develop strategies to increase recruitment of non-traditional students.
4. Continue to work with the industry in keeping current with industry needs and demands.
5. Maintain and expand industry contacts through internships, field trips, and guest lecturers.
6. Develop strategies to take advantage of the increased interest and opportunities in new technologies and potential markets, i.e., aquaponics, industrial hemp, medicinal marijuana, CBD oil production, etc.