

Assessment: Program Review Update



Program (AG) - Natural Resources Cert CT.3442

Program Catalog Summary:

Certificate:

SC Program: CT.3442

PROGRAM DESCRIPTION: The Natural Resources curriculum is designed to meet the demand for trained personnel in a broad range of Natural Resource/Environmental Science fields in addition to numerous private organizations.

This certificate is approved through the California Community College Chancellor's Office. Upon satisfactory completion of the listed requirements and filing an application for graduation with Admissions and Records, the student's transcript will reflect completion of this certificate.

PROGRAM LEARNING OUTCOMES:

Upon successful completion of this certificate, the student will:

1. Be qualified to pursue seasonal job employment with the Federal Government, a State Agency, or a Private company in a field related to Forestry & Natural Resources.
2. Be able to use a specified protocol following the scientific method to collect, analyze, evaluate, and document original research data.
3. Be able to accurately navigate in the field using maps, compass, a Global Positioning System (GPS). Students will also be able to use GPS for field data collection and Geographic Information Systems (GIS) for data mapping and display.
4. Be able to evaluate basic theory, concepts, and ecological principles as they apply to Forestry, Wildlife, Water Resources, and Ecosystem Restoration and will use his/her cumulative skills to think critically and to work out possible solutions to address problems facing Natural Resources managers today and in the future.

GAINFUL EMPLOYMENT INFORMATION: For information about our graduation rates, the median debt of students who completed this certificate, and other important information, please visit our website at http://www.shastacollege.edu/bait_nr_gainful_employment/.

CERTIFICATE REQUIREMENTS:

AGNR 1 Introduction to Natural Resources 3

AGNR 6 Native Plant Identification 3

AGNR 50** Natural Resources Measurements 4

AGNR 66A** Watershed Restoration Practicum I 1

AGNR 70 Wildlife Conservation and Management 3

GEOG 9 Map and Geospatial Principles 3

TOTAL UNITS FOR CERTIFICATE 17

**These courses also count towards the Watershed Restoration Certificate

Fall 2018

PRIOR PROGRAM REVIEW REFLECTION (If applicable)

Term and Year of Previous Review: Fall 2016

Discuss any changes to the program as a result of the previous program review: In March 2017 the PRC recommended this program continue without qualification.

Resources Received or Requested: Since the 2016 program review, the program received microscopes and GPS enabled tablets through Perkins funding.

CURRENT PROGRAM REVIEW

Who completed this form: Melissa Markee

Participation in completing this report: Area Faculty (list in the next box)

Discuss some of the program successes and benefits to the students and/or community: Our curriculum and industry contacts put us in a great position to allow our students to take advantage of the growing job market in forestry and natural resources. The Natural Resources certificate can be completed in one year and is a great introduction for students to the area of study or a complimentary certificate to other degrees.

According to the U.S. Bureau of Labor Statistics Employment Projections program, jobs for forestry and conservation technicians are expected to increase by 3.8% between 2016 and 2026. Additionally, employment for the closely related field of environmental science and protection technicians is expected to increase by 12.1% for the same time period.

List each PLO and write a brief narrative summary analysis discussing outcomes for each of them.: 1) Upon successful completion of this degree, the student should be able to have sufficient coursework and field experience to pursue seasonal technician jobs or to transfer to a University in a Natural Resources-related field

- This PLO is addressed in all of the classes that are part of the Natural Resources AS curriculum. Students completing the courses with passing grades satisfy this objective.

2) Upon successful completion of this degree, the student should be able to use an appropriate protocol following the scientific method to collect, statistically analyze, evaluate, and document original research data

- This PLO is addressed in all courses that are part of the Natural Resources AS degree.

3) Upon successful completion of this degree, the student should be able to accurately navigate in the field using maps, compass, a Global Positioning System (GPS). Students will also be able to use GPS for field data collection and Geographic Information Systems (GIS) for data mapping and display.

- This PLO is addressed through the completion of Maps and Geospatial Principals (GEOG 9) and Natural Resource Measurements (AGNR 50).

4) Upon successful completion of this degree, the student should be able to evaluate basic theory, concepts, and ecological principles as they apply to Forestry, Wildlife, Water Resources, and Ecosystem Restoration and will use his/her cumulative skills to think critically and to work out possible solutions to address problems facing Natural Resources managers today and in the future.

- This PLO is addressed in all courses that are part of the Natural Resources AS degree.

Describe how this program supports a transfer pathway to CSU or UC: The Natural Resources certificate can be completed in one year and is a great introduction for students to the area of study. The certificate may lead to completion of the Natural Resources AS degree and further studies to complete a degree at a 4-year university.

Specify Labor Market Demand (for CTE programs): According to the U.S. Bureau of Labor Statistics Employment Projections program, jobs for forestry and conservation technicians are expected to increase by 3.8% between 2016 and 2026. Additionally, employment for the closely related field of environmental science and protection technicians is expected to increase by 12.1% for the same time period.

PROGRAM DATA ANALYSIS

Program Effectiveness: While the number of Natural Resources certificates awarded by Shasta College remains low, students are consistently completing the program with 2 awards in 2015-2016 and 1 award in 2017-2018. It is anticipated that 2-3 students will be awarded a degree for the 2018-2019 academic year.

Students completing the Natural Resources certificate are also completing either the Forest Science and Technology AS or Natural Resources AS degrees. Students have been successful in gaining both seasonal and permanent employment. Students have recently been kept on by employers following summer positions. Students are currently working with both private and public companies. Transfer students who have gone on to complete BS degrees have also been successful in gaining permanent employment. In addition to the job board maintained in the 1200 building, positions are posted electronically through the

Forestry and Natural Resources Club Canvas page and the AGNR & Heavy Equipment Resource Center to assist students in finding openings.

Program Effectiveness (CTE): In March 2018, the natural resources program received special recognition from the Chancellor's Office for its strong workforce outcomes. The program receives a Bronze Star award for demonstrating a 86% increase in earnings for students who were last enrolled in 2015-2016.

Course Success Rates: The average success rates for courses within the forestry and natural resources program are 72.40, 74.72, 73.41% during the past 3 academic years.

Course Retention Rates: The average retention rates for courses within the forestry and natural resources program are 83.44, 85.75, 83.99% during the past 3 academic years.

Course Enrollments: The average census date enrollments for courses within the forestry and natural resources program are 22.6, 21.3, and 21.3 during the past 3 academic years.

Equity: The average percentage of male and female enrollments for courses within the forestry and natural resources program has been 56.79% and 42.62% respectively for the past three academic years. The average percentage of ethnicity for categories presented in area planning data for the past 3 years is as follows: 3.10% American Indian, 2.05% Asian, 0.85% black or African American, 0.08% Hawaiian/Pacific Islander, 13.53% Hispanic, 69.75% white, 0.86% non-resident alien, 5.83% two or more races, and 3.94% unknown. The average percentage for age categories presented in area planning data for the past 3 years is as follows: 29.56% 19 or less, 31.64% 20 to 24, 13.23% 25 to 29, 8.56% 30 to 34, 6.37% 35 to 39, 5.38% 40 to 49, and 5.56% 50 and older.

CURRICULUM

Review of courses with prerequisites: Coursed offered in the Ag-Natural Resources area and required to the Natural Resources certificate do not have prerequisites.

Challenges to offering key courses: No courses are recommended to be removed from the program at this time. Courses struggle to meet the minimum enrollment of 20 students per unit often requested by administration. It would be helpful if courses only offered once per year or once every other year were exempt from the same enrollment requirements of general education classes that are offered multiple times each semester.

Course changes: No changes have been made to the titles of any of the program related courses. The addition of new courses to the degree or certificate are not recommended at this time.

SUMMARY

Changes or improvements needed based on the analysis above: No changes or improvements to the program are needed at this time. This may be reevaluated if the program does not continue to have awards given on an annual basis

Note any resources you intend to request through the Area Planning process to improve the program: A computer cart is being requested for to improve the program. With the removal of the 1200 building computer lab in fall 2017, students have less access to computer resources that are important for students to apply computer skills using Forestry-related software.

Conclusion: The Natural Resources certificate program is a unique program to Shasta College and feeds into both the Forest Science and Technology and Natural Resources AS degrees. Given our local resources and the importance of natural resource management, the program is valuable to our community and environment. The program appears to be in a growth period and additional awards are anticipated in the coming academic years.

****BELOW TO BE COMPLETED BY THE PROGRAM REVIEW COMMITTEE****

PROGRAM AWARDS

Award Type	Program Type	2012-13	2013-14	2014-15	2015-16	2016-17
Associate of Arts Degree	Natural Resources Cert	0	1	0	2	2
Grand Total		0	1	0	2	2

COURSE STATISTICS

		Academic Year				
Course Name		2012-13	2013-14	2014-15	2015-16	2016-17
AGNR-1	# of Sections	2.0	2.0	1.0	1.0	2.0
	Enrollment	49.0	47.0	20.0	23.0	44.0
	FTES	7.7	7.5	3.0	3.2	6.5
	FTEF	0.57	0.57	0.28	0.28	0.28
	WSCH	230.0	225.0	90.0	95.0	193.0
	Avg Enrl/Section	25	24	20	23	22
	Avg FTES FTEF	13.54	13.24	10.59	11.19	14.12
	Avg WSCH FTEF	405.9	397.1	317.7	335.3	423.6
AGNR-6	# of Sections	1.0	1.0	1.0	1.0	1.0
	Enrollment	25.0	27.0	26.0	25.0	22.0
	FTES	4.0	3.8	3.8	3.7	3.5
	FTEF	0.28	0.28	0.28	0.28	0.28
	WSCH	120.0	115.0	115.0	110.0	105.0
	Avg Enrl/Section	25	27	26	25	22
	Avg FTES FTEF	14.12	13.52	13.52	12.95	12.35
	Avg WSCH FTEF	423.6	405.9	405.9	388.3	370.6
AGNR-50	# of Sections	1.0	1.0	1.0	1.0	1.0
	Enrollment	25.0	19.0	13.0	20.0	19.0
	FTES	6.4	4.5	3.5	4.3	5.1
	FTEF	0.43	0.43	0.43	0.43	0.43
	WSCH	192.0	136.0	104.0	128.0	152.0
	Avg Enrl/Section	25	19	13	20	19
	Avg FTES FTEF	14.77	10.45	8.01	9.85	11.70
	Avg WSCH FTEF	443.1	313.9	240.0	295.4	350.8
AGNR-66A	# of Sections		1.0	2.0	2.0	1.0
	Enrollment		34.0	48.0	57.0	38.0
	FTES		2.2	3.1	3.2	2.3
	FTEF		0.11	0.22	0.22	0.11
	WSCH		67.0	93.0	97.0	69.0
	Avg Enrl/Section		34	24	29	38
	Avg FTES FTEF		20.04	13.99	14.45	20.59
	Avg WSCH FTEF		618.7	429.4	447.8	637.1
AGNR-70	# of Sections	1.0	1.0	1.0	1.0	1.0
	Enrollment	27.0	22.0	19.0	23.0	16.0
	FTES	4.5	3.3	3.2	3.5	2.5
	FTEF	0.28	0.28	0.28	0.28	0.28
	WSCH	135.0	100.0	95.0	105.0	75.0
	Avg Enrl/Section	27	22	19	23	16
	Avg FTES FTEF	15.88	11.75	11.19	12.35	8.82
	Avg WSCH FTEF	476.5	353.0	335.3	370.6	264.7
GEOG-9	# of Sections		2.0	2.0	1.0	1.0
	Enrollment		49.0	39.0	31.0	24.0
	FTES		6.8	4.2	2.9	4.0

	FTEF		0.57	0.57	0.28	0.28
	WSCH		205.0	157.0	144.0	120.0
	Avg Enrl/Section		25	20	31	24
	Avg FTES FTEF		12.05	7.36	10.24	14.12
	Avg WSCH FTEF		361.8	277.1	508.3	423.6
Grand Total	# of Sections	5.0	8.0	8.0	7.0	7.0
	Enrollment	90.0	128.0	127.0	135.0	137.0
	FTES	22.6	28.3	20.7	20.8	23.9
	FTEF	1.57	2.24	2.06	1.78	1.67
	WSCH	677.0	848.0	654.0	679.0	714.0
	Avg Enrl/Section	18	16	16	19	20
	Avg FTES FTEF	14.37	13.29	10.75	12.21	13.62
	Avg WSCH FTEF	431.0	401.2	339.0	399.1	411.7