The Environmental Studies Program offers courses that cover a range of topics of interest to a variety of students. ENVS 101, 107, 108 and 141 meet Ohlone College Plan A, Area I. ENVS 103, 105, 107, 108, and 109 meet Area II. ENVS 103 and 105 meet Area VI. ENVS 104 and 108 are UC/CSU transferable and offer pathways to an associate degree, continuing education, and job skills. Students look at real world environmental challenges and work locally to affect change, benefiting the college and surrounding community.

The mission of the Ohlone College Department of Environmental Studies is to prepare students to be active participants in shaping a sustainable future. By fostering student understanding of how human society and the environment are interwoven, our program emphasizes the benefits of the triple-bottom line - promoting stewardship of the earth, fostering innovation for a strong economy, and respect, value and equity for the lives of all living things.

The way our society currently functions is unsustainable. The only way to maintain the proper functioning of earth’s life-sustaining processes is to change the way things are done. Environmental Studies addresses today’s social, environmental, and economic problems by helping students develop critical thinking and other skills necessary to bring about change. Furthermore, many of our planet’s problems will be resolved through the development, innovation, and use of technology such as IT, renewable energy, fuel cells, and green chemistry. The development of these environmental solutions will fuel increases in jobs, economic growth, and a healthier environment.

The program emphasizes "hands-on and experiential learning." Student projects often require going outside of the classroom and interacting with the campus.
community. For example, in some courses students have done projects that require collaboration with facilities, other students, and professors in other departments. Students working to improve recycling on campus had to work with facilities, purchasing, and each department on campus to agree to cooperate on separating recyclables. During the 2012-2013 academic year, ENVS collaborated with Bio Tech to conduct soil sample experiments in the Urban Farm Research Lab. In 2013-2014 the program received a grant from Kaiser Permanente. The grant was focused around healthy living and health eating. Environmental Studies, Biotech, Health and Wellness Programs, and Puente Students are all actively involved with the grant.

11. Discuss the impact of the program on the community and the impact of the community on the program.

The Environmental Studies program works collaboratively with established community agencies, local high schools and workforce development to educate and train the future workforce in current and future green jobs and technology. In June 2013 a three year HERO grant concluded. The college offered nine courses to educate and train displaced and veterans in the field of green and emerging technology fields. LEAF (Local Ecology and Agriculture Fremont) and Avanzando have been copartners with the 2013-2014 Kaiser Grant. The purpose of the grant is to teach the prevalent ethnic minority groups how to eat healthy, find similarities in what they are growing, teach students farming techniques, and social responsibility.

- College Mission

  1. Mission Statement

  The mission of Ohlone College is to serve the community by offering instruction for basic skills, career entry, university transfer, economic development, and personal enrichment for all who can benefit from our instruction in an environment where student-learning success is highly valued, supported and continually assessed.

  2. Vision Statement

  Ohlone College will be known throughout California for our inclusiveness, innovation and superior rates of student success.

  3. Core Values, Goals & Objectives:

  College Core Values

  - We provide life-long learning opportunities for students, college personnel and the community.
  - We open access to higher education and actively reach out to underserved populations.
  - We promote diversity and inclusiveness.
We value trust, respect and integrity.
We practice innovation and actively encourage risk-taking and entrepreneurship.
We demonstrate stewardship for our human, financial, physical and environmental resources.

College Goals/Objectives

2. Support the economic vitality of the community through educational programs and services that respond to identified employment needs.

1. By 2011, produce a local strategic plan for Career Technical Education to include an inventory and assessment of our current programs, environmental scan data, a SWOT analysis, and a five-year set of goals, objectives and action plans.

2. Within the context of the CTE Strategic Plan, by 2012, identify needs of local employers and create responses through our existing programs, contract education, and new program development.

3. By 2013 create a curriculum, which enhances the availability of programs that focus on emerging industries including green technologies and those identified by the Alameda County Workforce Investment Board and Department of Labor. High growth, high demand job training initiative.

5. Lead and educate the community in environmental sustainability.

1. By 2011 model environmental sustainability in all college policies, procedures, and practices through adherence to board policy 6650 and board regulation 9.2.3.3 Environmentally Preferred Purchasing Procedures.

2. By 2012 support innovation in sustainability and environmental friendliness by providing professional developmental opportunities and fiscal resources through the Ohlone Foundation Sustainability Endowment.

3. By 2013 employ sustainability principles in all college facilities and operations using the President Climate Commitment as a guideline.

4. By 2015 educate students, staff and community about the value of sustainability using the framework of the California Smart Growth Initiative as a model and having 75% of the Ohlone employees annually sign the college’s green pledge.
4. *Briefly describe how the program supports the college mission, vision selected college values.*

The Environmental Studies Program supports the college mission and vision by offering transfer and career technical education courses to the public. The program is constantly innovating to adjust to the needs of the market and workforce. We have developed new courses such as advanced solar PV, solar thermal, solar sales, green buildings, in 2013-2014 we are introducing new subject such as climate change and teaching the students healthy, more eco-friendly food growing processes. We work with One Stop and Alameda County WIB to offer courses (for credit or contract education) to help meet the employment needs of the community.

5. *Briefly describe how the program supports selected college goals.*

The environmental studies program is an identified CTE program, housed in the Health Science and Environmental Studies Division. The environmental studies program supports multiple college goals by offering degree credit courses as well as career technical education. We educate students in emerging energy technologies and green careers, which promotes local economic vitality and a sustainable future. We continue to work with New Energy Faculty Forum, Silicon Valley Leadership Group, Workforce Initiative Board, Ohlone One Stop, Mission Valley R.O.P, and the local Kennedy High School Green Academy. Our newly formed relationship with Kaiser and LEAF allows us to provide lifelong learning opportunities for students, college personnel, and the community.

6. *Briefly describe how the program supports selected college objectives.*

The program is one of the identified Ohlone College CTE programs. The program actively promotes, educates, trains and engages current students, faculty, displaced workers and industry in "green technology" as well as green business practices meeting goal #2.

The program course offerings also meets goal #5. The faculty as well as course offerings promote a healthy and sustainable culture. The program sponsors Earth Week events, educating students, faculty and staff regarding green principles. The planting of the Urban Garden demonstrates an example of a sustainable and organic garden. The garden is supported by Waste Management, demonstrating how waste can be turned into usable materials. The new project with Kaiser and LEAF is an example of how goal #5 is met.

- Program SLOs & Assessment
  1. Program SLO -
Recognize the social, economic, and environmental impacts of humans on earth, and identify sustainable solutions to these environmental problems.

*Indicate program assessment strategies used.*

- Rubrics for oral presentation
- Department testing
- Research paper
- Field trip

Describe the criteria and standards used to appraise student work.

Students must earn passing grades on assessments and assignments, attend class, and contribute to discussions, projects, and engage in critical thinking.

Enter assessment results and analyze student success in achieving this program SLO.

Fall 2012 - ENVS 103 and ENVS 108 - Students and faculty graded oral presentations using oral rubrics. 100% succeeded in meeting SLO needs. See attached*

ENVS 108 - Fall 2011, students showed a 20.8% improvement in their ecological footprint, with 87.5% of students shrinking their resource use.

ENVS 108 - Spring 2012, students showed a 16.6% improvement in their ecological footprint, with 92.5% of students shrinking their resource use.

Spring 2013 – ENVS 102 and ENVS 103. Students were graded on the discussion board participation. See attachments. ENVS 108 and ENVS 142 had success in the achievements of their SLOs. Also analysis is located on SLOA website.

Fall 2013 – ENVS 101, 105, and 107 will be assessed.

Describe revisions in curriculum or teaching strategies implemented to promote student success.

Continue to update current environmental issues and topics to reflect changes with new data in environmental sciences. During 2013-2014 the Environmental Studies, Environmental Science and certificates will be reexamined. The ENVS program is six years old. It is time to make sure the course work offered for the Ohlone College degree and the courses
for transfer are still appropriate and relevant. This timing is perfect as the faculty are working on the statewide AAT and AST degrees.

*Future Action (Improvements)*

Program SLO -

Gain experience with a variety of environmental field and laboratory techniques that will emphasize different fields of environmental studies.

*Indicate program assessment strategies used.*

Performance assessment
Department testing
Vendor or Industry certification examination (NABCEP).
Other

The standard A to F grading scale will occur.

Students will demonstrate proper safety protocol, and be capable of achieving certain objectives for each class.

*Describe the criteria and standards used to appraise student work.*

This SLO is well aligned with ENVS 104: Solar Voltaic Installation and Design, ENVS 106: Wind Energy, and ENVS 142: Environmental Biology.

*Enter assessment results and analyze student success in achieving this program SLO.*

In 2013 ENVS 104 and ENVS 106 were not offered due to low enrollment, therefore there was no assessment completed for these classes.

In Spring 2013 Dr. Watanabe assessed two of his courses ENVS 142 and ENVS 108. In ENVS 142 14/16 students received 84% average on exams. 14/16 students were able to achieve SLO#2 to correctly identify organisms.

In Spring 2013 Dr. Watanabe also assessed ENVS 108. He had 100% participation in the online section of this course in the assignment to map the individual student footprint on the planet. The information was
aggregated and students were amazed at the mark they made on the planet.

Describe revisions in curriculum or teaching strategies implemented to promote student success.

Changes to curriculum and teaching/learning strategies will occur after data is analyzed.

Future Action (Improvements)

Program SLO -

Apply an understanding of science and ecological principles to modern life so students may critically analyze and understand information affecting the environment.

Indicate program assessment strategies used.

Rubrics
Department testing
Research paper
Oral presentation
Field Trip

Describe the criteria and standards used to appraise student work.

Students must earn passing grades on assessments and assignments, attend class, and contribute to discussions, projects, and engage in critical thinking. The standard grading scale of A to F will apply.

Enter assessment results and analyze student success in achieving this program SLO.

This SLO is aligned with ENVS 101 and ENVS 107. These courses are offered once a year. ENVS 101 will be put into rotation to be assessed in the Fall 2013; ENVS 107 will be put into rotation to be assessed in the Fall of 2013.

Describe revisions in curriculum or teaching strategies implemented to promote student success.

Revisions will occur as a result of assessment data collected.
Future Action (Improvements)

Program SLO -

Discuss and describe how current, past, and future resource use and environmental policy have affected the health of the environment.

*Indicate program assessment strategies used.*

Rubrics
Skills Assessment
Department Testing
Vendor or Industry certification examination

*Describe the criteria and standards used to appraise student work.*

The quizzes and exams will be graded using the standard A to F scale.
Oral presentations will be assessed using a rubric. Students and faculty both assess presentations.

*Enter assessment results and analyze student success in achieving this program SLO.*

This SLO is best aligned with ENVS 102, 105, and 109.
ENVS 105 will be assessed in Fall 2013.
ENVS 102 and 109 were assessed in Spring 2013. The analysis is found on the SLOA website.
During the Spring 2014 semester 102 and 103 being assessed. The other courses will fall into the cue.

*Describe revisions in curriculum or teaching strategies implemented to promote student success.*

Revisions will be made as results of assessments are discovered.

Future Action (Improvements)

**SLO Matrix**

Key: I-Introduced, P-Practiced with Feedback, M-Demonstrated at the Mastery Level

<table>
<thead>
<tr>
<th>Course</th>
<th>SLO-1</th>
<th>SLO-2</th>
<th>SLO-3</th>
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<td>GEOG 122</td>
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SLO Matrix Comments

There is no one-capstone project at this point of time in the ENVS division. However, several courses such as ENVS 103 and 108 require students to present oral presentations. ENVS 104 has students demonstrate the assembly of a solar photovoltaic system. ENVS 106 has the students conduct experiments using wind technology.

Student Achievement: A series of measures including course completion, course retention, persistence, program completion, and others.

List expected student achievement outcomes:

- Continue to grow, add courses, and add students to the major. Actively promote certificate and degree completions by identifying declared majors and encouraging success. The department is actively involved in creating the curriculum for the AST-Environmental Studies/Science. Advertise student certificates in syllabi. Continue outreach to community and seeking outside funding sources.

Analyze changes in data, identify trends, and provide possible contextual explanations for each measure used. (Example measures include: course completion, course retention, persistence, program completion).

Ongoing analysis demonstrates:

- Fall 09: 86.13% retention
- Spring 10: 80.77% retention (online 72.22% retention)
- Summer 10: 90.91% retention (online 81.82% retention)
- Spring 2011: 90.72 retention rate.
Fall 2011 had a potential for 204 students and 216 attended classes. This demonstrates an increase of 5.5%.

Spring 2012, fill rate 80%.

Fall 2012, predicted fill rate 83%.

ENVS 108 - Academic year – 2012-2013 – 63.53% success rate, 21.05% failure rate, 15.41% withdrawal rate.

Enrollment trends and course success rates present some disturbing data. Since the opening of the ENVS division in 2007, according the data only six degrees have been granted. Upon further investigation, it was discovered that several of the degree required courses were cancelled due to low enrollment and budget management over the past few years. These courses are housed in the SEM division. Upon discovery of these events, the Dean of SEM has placed these courses into the summer 2013, Fall 2013 and Spring 2014 calendar. Graduation 2014 data will help to further analyze if offering courses increased student attainment of AA or AS degrees in ENVS.

We also examined the lack of awarded certificates in the ENVS division. The faculty will take time in every course to walk students through the certificate process. The faculty will further investigate why the college’s Colleague system cannot automatically award certificates. The faculty are concerned that a lack of degrees awarded and a lack of certificates awarded may indicate they are not doing their due diligence.

During fall 2013 the faculty surveyed a sample of 50 students in ENVS courses. The purpose of the survey was to explore if students are taking ENVS as a major, taking ENVS to meet GE, taking ENVS to obtain Ohlone College AS/AS degree or to transfer to UC/CSU/private institution to attain a BA/BS degree. This information will assist us as we examine the total ENVS curriculum for currency, relevancy and transferability.

The results of the survey provided the following data:

I am enrolled in ENVS courses to fulfill:

22 for Self-enrichment

23 for GE requirement

7 for certificate

9 for Ohlone College Degree
31 for transfer to a
My declared major:
17 undeclared
13 ENVS
2 English
2 Computer Science
1 Visual Arts
2 Kinesiology
1 Early Childhood Education
2 Sociology
1 Biology
1 Communications
1 Wildlife Ecology
1 Medical Engineering
1 Chemistry

The acquisition of this data will assist the ENVS faculty, Dean and Dean of SEM as we example course offerings. Several questions we will be asking will be how can we attract more ENVS majors? Is the purpose of this division to provide GE courses?

*Analyze program budget trends and expenditures. Comment on how the program can best use budget resources.*

The 2013-2014 overall ENVS budget is $235,506.00. This budget consists of 99.4% allocated to salary and benefits with the remaining 0.06% allocated for supplies and materials. The program currently has a foundation of equipment, supplies and materials for teaching courses. The program has received several grants which has afforded the growth of course offerings. Without grants, the
existing budget will not support the supplies and materials necessary for maintenance of our current programs.

*Analyze the program's current use of staff, equipment, technology, facilities, and/or other resources. Comment on how the program can best use these resources.*

The program currently uses staff, equipment, and facilities to their fullest. However, expansion of the program into GIS, building performance and home energy will require additional resources and staff.

*Describe any additional notable program achievements (optional).*

**Additional Program Table Data**

**Future Action**

Current levels of student achievement indicators maintained.

**Program Analysis**

After assessing student-learning outcomes/impacts, student/program achievement, and the status of previous program improvement objectives (PIOs), analyze the data and any identified trends, and summarize your findings. Use these data and trends to prioritize, revise, or develop new PIOs

*Describe program achievements and successes.*

2010 One student graduated with AA.

2011 Two students have certificate in Environmental Stewardship.

Expanded program to include sustainable agriculture, wind, green buildings. In the Spring of 2013 we hope to add environmental policy and management.

Spring 2014 – new course will be offered, ENVS 110: Climate Change: Science and Society.

In 2011-2012 we continue to offer courses, which meet the AA/AS degree and certificates of accomplishment. We will continue to slowly roll out new curriculum, which will enhance student success.

Even though we have only had two certificates and two AA degrees granted to date, ENVS 101, 107, 108 and 142 meet Plan A Ohlone College Area I. ENVS 103, 105, 107 and 108 meet Area II, ENVS 108 meets Area IV and ENVS 103 and 105 meet Area VI. Also ENVS 104 and 108 meet Plan B Area B 2.
In 2011 the Bureau of Labor Statistics (Occupational Employment Statistics) indicated the largest growth in the solar industry will be in solar design, installation and sales.

In 2012, the program now has over 41 declared majors.

In 2012, With the help of faculty, several students will be filing paperwork for certificates and the AA/AS degrees.

CTE - the department has been active with several colleges in the area, DOL, workforce programs, training in students in the field of building performance, energy efficiency, solar sales, and solar installation.

The department has goals to create a certificate program in building performance and solar PV and solar thermal.

In 2012, students in ENVS 104 - Solar PV, will do an actual live install with Grid Alternatives in Castroville, CA.

Over the last four semesters, GEOG 121, 122, and 123 were not being offered. These courses are required for the AA in Environmental Studies; GEOG 121 is required for the AS in Environmental Science. In the academic year of 2012-13, these courses were offered for the first time in a continuous succession; therefore, the department anticipates greater success in students obtaining their AA or AS degrees.

According to the evidence, what are the areas needing improvement?

Continue to collaborate and align with industry standards. Work in collaboration with Bay10 community colleges to offer complimentary course offerings.

Continue to implement our internal three-year roll out of curriculum.

Work on building internships and stronger ties for students to get work.

Investigate the small numbers of awarded AA/AS degrees.

Investigate the small number of awarded certificates.

Investigate the drop in success rates, non-success rates and withdraw rates. We will obtain additional information from the college research department to identify if face to face or distance learning constitutes the more effective delivery method.
Program Improvement Objectives:

**Objective:**

Assess curriculum alignment and contact with four year CSU and colleges to improve completion rates, certificate attainment and degree acquisition.

*Action Plan*

Re-examine the degrees for applicability for direct transfer to CSU’s and UC’s.

Perform a total curricular examination the ENVS program course offerings which will lead to an increase in the number of awarded AS/AA degrees and transfer rate to UC/CSU/private universities

Conversations with Ohlone College counselors regarding the program and degree offered.

Meet with CSUs and colleges for transfer articulations.

*Staffing*

Conversations with Ohlone College counselors to education them about programs.

ENVS faculty time to meet with CSUs and colleges.

*Equipment (other than technology)*

None

*Technology*

None

*Facilities*

None

*Assessment Plan*

*How will you assess the effectiveness of your PIO?*
Monitor program certificates and degrees earned starting Spring 2014 and compare to past 5 years

Which college goal(s) does this program improvement objective work to achieve? Clearly describe how your PIO will help achieve one or more of the college goals and objectives, has impact beyond the particular department, and contributes to student learning/success

2. Support the economic vitality of the community through educational programs and services that respond to identify employment needs.
5. Lead and educate the community in environmental sustainability.

PIO Assessment

Enter assessment results with analysis.

No results currently available, will access in Fall 2014.

Describe how PIO achieved one or more of the college goals and objectives, had an impact beyond the particular department, and contributed to student success/learning.

No results currently available, will access in Fall 2014.

Analyze the impact of reallocation or addition of resources. If money or resource was not used, give rationale.

No results currently available, will access in Fall 2014.

Objective:

Expand renewable energy coursework at the Newark Campus to give students "hands" on experience with new and expanding renewable energy technologies, through the use of outdoors labs.

Action Plan

Actively use of the new greenhouse will assist with hands on experience

Staffing

Facilities, grounds, and purchasing to assist with project and IT support as needed. Faculty and TA's.

Equipment (other than technology)
Building structure, wind turbine (small), electrical needs, and lab materials for course work. Laptops for use to monitor and instruct coursework.

**Technology**

Laptops to support wind turbine, curriculum, and faculty.

**Facilities**

Buildings, grounds, and facilities support to design, construct, and maintain wind turbine and possible interaction with grid. Assistance with permits as needed.

**Assessment Plan**

*How will you assess the effectiveness of your PIO?*

Test the level of student understanding of wind turbine renewable energy generation.

*Which college goal(s) does this program improvement objective work to achieve? Clearly describe how your PIO will help achieve one or more of the college goals and objectives, has impact beyond the particular department, and contributes to student learning/success.*

2. Support the economic vitality of the community through educational programs and services that respond to identify employment needs.
5. Lead and educate the community in environmental sustainability.

**PIO Assessment**

*Enter assessment results with analysis.*

This PIO was just written. We wish to purchase a Wind Generator to enhance the wind class.

*Describe how PIO achieved one or more of the college goals and objectives, had an impact beyond the particular department, and contributed to student success/learning.*

Not applicable

*Analyze the impact of reallocation or addition of resources. If money or resource was not used, give rationale.*

Not applicable at this time.

**Future Action**

Outside Review Results 03/12/2012
List each team members name and title.

Narinder Bansal, Assistant Professor
Jeff Watanabe, Associate Professor
Gale Carli, Dean.
Chris Moreno, Student Sustainability Coordinator

Discuss key feedback provided by team and how it was incorporated into the report.
None.

Attached Files
All SLOA assessments are located on the SLOA website.