



▼ Dept - (BHES) Environmental Studies



Program Mission Statement: The mission of the Environmental Studies/Science Department is to provide students with a diverse offering of classes that meet the transfer needs of students, prepares students for careers in industry as well as make them knowledgeable and strong stewards of the environment .

I.A.1 What is the Primary Focus of Your Program?: Transfer

I.A.2 Choose a Secondary Focus of Your Program?: Career/Technical

I.B.1 Number Certificates of Achievement Awarded: 16

I.B.2 Number Certif of Achievement-Advanced Awarded: 3

I.B.3 #ADTs (Associate Degrees for Transfer) Awarded:

I.B.4 # AA and/or AS Degrees Awarded: 5

I.C.1. CTE Programs: Impact of External Trends: Energy Management & Building Science (EM&BS) Program: Growth continues in California and nationwide towards building careers in energy efficiency and sustainable building. This is being driven by Net Zero Energy (NZE) legislation requiring new commercial and residential buildings to be 50% net energy efficient by 2020. There has been identified an employment gap in Facility Management careers in California and the Bay Area. These trends have led to new course offerings and curriculum as well as certificates and degrees.

Environmental Resource Management & Pollution Prevention (ERM&P2) Program: Continued growth is seen in air & water quality, water resources, recycling & waste management, hazardous materials management, land use planning & redevelopment, and climate change mitigation & adaptation, driven by government mandates & economic opportunities. Trends affect both curriculum (content & course offerings) and enrollment management (number of course sections offered).

I.C.2 CTE Programs: Advisory Board Input: EM&BS Advisory Board Input: (October 23, 2016)- The Advisory Board highly recommends placing a Facility Management (FM) certificate and degree into curriculum. EM&BS has collaborated with the Business and Computer Science departments to enter an FM Certificate and Degree into the curriculum with a combination of Business, Accounting, Real Estate, Computer Science and EM & BS course. All proposed course are already in curriculum. No new courses are required. Catalog date: Fall 2018.

ERM&P2 Program: Recommendations: 1) Continued evaluation & updating of curriculum & course content, 2) Continued development of internship alliances with local industry, government agencies & non-profits. Ongoing work continues in both areas.

I.D.1 Academic Services & Learning Resources: #Faculty served:

I.D.2 Academic Services & Learning Resources: #Students served:

I.D.3 Academic Services & Learning Resources: #Staff Served:

I.E.1 Full time faculty (FTEF): 5

I.E.2 #Student Employees: 10

I.E.3 % Full-time : With the hiring of 2 full time faculty in the 2015-2016 year, we saw increases in the FT/PT ratio in ES and ESCI for 16 -17; FT faculty now teach 30% of ESCI sections and 63% of ES sections.

I.E.4 #Staff Employees: 1

I.E.5 Changes in Employees/Resources: The department has hired 2 new full time instructors - one in ES and the other in ESCI, this has greatly assisted with department functioning, outreach and assistance for students and the overall morale of the department.

II.A Enrollment Trends: Over the past four years, enrollment for the ES/ESCI department has increased. Year to year from 2012 - 2013 to 2015 - 2016 enrollment has increased by 600 students.

II.B.1 Overall Success Rate: The overall success rate for all students in the ES/ESCI department has remained consistent over the last four years ranging between 88% to 91% in ESCI and 70% - 72% in ES.

II.B.2 Plan if Success Rate of Program is Below 60%: N/A.

II.C Changes Imposed by Internal/External Regulations: Energy Management and Building Science: California's Zero Net Energy Action Plan requires all buildings in the State be 50% Net Energy Efficient by 2020. Changes in EM & BS current curriculum have been made to address this requirement and effectively prepare and train EM & BS students for future jobs in response to this legislation. No new classes were needed. Existing courses were enhanced. All changes to existing curriculum will be effective FALL 2018.

Environmental Resource Management & Pollution Prevention : No changes were imposed by internal/external regulations.

III.A Growth and Decline of Targeted Student Populations: ESCI enrollment in targeted student populations over the past 3 years has increased, with the Latino student population accounting for the largest increase going from 411 students to 544 students. The success rates of our targeted students has ranged from 81% to 86% during this time. ES enrollment in targeted student populations over the past 4 years has also increased, African American student enrollment has increased from 131 to 185, Filipino student enrollment grew from 89 to 155 and Latino students increased from 467 to 654.

III.B Closing the Student Equity Gap: The Equity Gap in the ES department over the past 3 years has decreased from 14 to 13 percentage points and in the ESCI department has decreased from 10 to 8 percentage points.

III.C Plan if Success Rate of Targeted Group(s) is Below 60%: Target population success rates exceed 60% in all areas of ES and ESCI.

III.D Departmental Equity Planning and Progress: The ES/ESCI department is committed to addressing the equity gap. The departments provide textbooks, computers and dedicated spaces for student use in the Kirsch Center. Instructors have been using the facilities on campus



including the Cheeseman ESA - as an alternative to off campus field trips. They have also been incorporating more hands on lab activities to make material more relevant. Instructors are making off campus field trips, when scheduled, both optional and at no cost to students including trips to the Monterey Bay Aquarium and the Marine Mammal Center.

IV.A Cycle 2 PLOAC Summary (since June 30, 2014): 0

IV.B Cycle 2 SLOAC Summary (since June 30, 2014): 0

V.A Budget Trends: The ES/ESCI budget has remained constant for the past several years. We are able to access Perkins funding and SWPI funding which has enabled us to strengthen our CTE programs and the student experiences in them.

V.B Funding Impact on Enrollment Trends: With the resource assistance available through SWPI funding and Perkins funding we are hoping to grow enrollment in our CTE programs. We also hope to continue to attract students to our traditional class offerings and to ensure these students are retained and successful.

V.C.1 Faculty Position(s) Needed: None Needed Unless Vacancy

V.C.2 Justification for Faculty Position(s): We would need to replace any vacancies due to retirement to sustain the department's commitment to closing the equity gap, and in recruiting, retaining and ensuring the success of all students, and educating and engaging students in current and very relevant environmental issues.

V.D.1 Staff Position(s) Needed: Replace vacancy

V.D.2 Justification for Staff Position(s): The ES/ESCI department has one staff member and the loss of this position would be very detrimental to the functioning of the department.

V.E.1 Equipment Requests: Over \$1,000

V.E.2 Equipment Title, Description, and Quantity: NEW:

Eye wash station, safety shower, biological sample refrigerator, plant and animal models, on-going lab supplies (Beakers, Erlenmeyer flasks, microscope slides, microscope cover slips, lamps (Photosynthesis expt), disposable gloves); camera/projection microscope, educational videos, on-going field supplies (measuring tapes, scales, buckets, gloves, boots, etc

Energy Management and Building Science: Storage Locker with Combination lock for Building Automation Systems Equipment purchased with SWP funds, Two Tesla Powerwall Batteries for solar storage education and training;

Small Wind Turbine for off grid, Renewable Energy educational showcase in Kirsch Solar Demonstration Lab;

ES 75B- Energy Power Systems Demand Response Lab Equipment and Software; ES 74B Advanced Lighting Control Lab Equipment, Luminaires, Ballasts, daylight and occupancy sensors; ES 70B Energy Audit Blower Door Test Equipment;

Online Energy Management Education Lab simulation software; KCES Electrical Room Power Monitoring system with network connectivity for access to data in classroom

ERM&P2 Program: Field & lab equipment (sampling & analytical equipment) and associated supplies in support of CTE courses offered in air, water, & soil management, water resources, recycling & waste management, hazardous materials management, land use planning & redevelopment, and climate change mitigation & adaptation



Replace/ Upgrade:

25 New Laptops/Tablets to be used in ALL EMBS Lab classes (5 total lab classes);
10 Voltmeters/ Ampmeters; 10 Temperature Probes; Upgrade Thermal Imaging Camera; SCADA Kit for Marcraft RS 3000- HVAC Lab Panel; SCADA Kit for Marcraft GT 1000- Solar PV Technology Panel; Five Multimeters/Clamp Meters; Three Oscilloscopes for measuring electrical sine waves in EMBS Lab classes; Educational signage for KCES Solar Demonstration Lab; Upgrade/ Improve KCES basic tool box- Screwdrivers, wrenches, socket wrenches, etc

V.E.3 Equipment Justification: Eye wash station and showers are being requested for safety purposes. The refrigerator is being requested to preserve biological samples, media, reagents etc. All other supplies are being requested to give students hands on experiences in the lab setting so as to make the subject matter more relevant to them as they learn and allow them to grasp scientific concepts more easily. Exposure to these learning tools is essential to students success and retention and even more so to our targeted student populations.

Energy Management and Building Science: All requested equipment, tools and software will be used in EM & BS lab classes allowing students to demonstrate Energy Management and Sustainable Building technical competencies. Requested equipment addresses the EMBS Advisory Board request that students have Energy Management hands on experience to be qualified for growing Energy Management and Sustainable Building jobs and careers. SLO's for EM&BS Energy Management Lab proficiency will be assessed in the 2017-2018 and 2018-2019 academic years.

Environmental Resource Management & Pollution Prevention Program: Equipment is needed to properly train students in this CTE program for jobs and careers in the fields of environmental protection and resource management, fields which are heavily dependent upon field and lab work. Without this equipment, students will lack critical training looked for in the real world. The program's Advisory Board recommends continued expanded training using the latest equipment as a critical need.

V.F.1 Facility Request: None

V.F.2 Facility Justification: None

V.G Equity Planning and Support: The ES/ESCI department is committed to addressing the equity gap. The departments provide textbooks, computers and dedicated spaces for student use in the Kirsch Center. Instructors have been using the facilities on campus - including the Cheeseman ESA as an alternative to off campus field trips as they have come to realize that off site field trips can make the learning experience less equitable. Instructors have also been incorporating more hands on lab activities to make material more relevant. They are making off campus field trips both optional and free-of-cost to students. Training opportunities through the staff development and equity offices would benefit the faculty to have a better understanding of what they can do to further reduce the equity gap.

V.H.1 Other Needed Resources: None

V.H.2 Other Needed Resources Justification: None

V.J. "B" Budget Augmentation: B Budget augmentation would help us enrich the classroom experience for students and enable us to provide more hands on lab activities for students both in the general education classes as well as our career technical education classes.

V.K.1 Staff Development Needs: N/A

V.K.2 Staff Development Needs Justification: None

V.L Closing the Loop: The ES/ESCI department are committed to their goal of decreasing the equity gap and increasing student success , meeting the transfer needs of students, preparing students for careers in Energy Management and Building Science and Environmental Resource Management and Pollution Prevention and educating all our students to be strong stewards for environmental issues.

Submitted by: Anita Muthyala-Kandula

Last Updated: 03/24/2017

APRU Complete for 2016-17: Yes

#SLO STATEMENTS Archived from ECMS:

