

2019-2020 Annual Update



CAN Program Review (Instructional) - Earth Science (Even Year)

Annual Updates

2019-2020

1. Changes & Updates: A major update is that the Earth Science program moved into the new Building 23 at the start of Fall 2019. Overall we are pleased with the new space, and most of the minor issues associated with the new instructional space have been resolved. Two issues are still pending. The first is the inclusion of a triple whiteboard on the side wall. A single pane whiteboard was installed. The size is good, but there is only one pane. When we do get the triple pane board, we need to ideally find a product taller than the current triple whiteboard at the front of the room. The second issue is the installation of a new map flat file on top of our existing file. It is our understanding that the flat file has been ordered. We did not include these requests in an equipment request this year, as it is our understanding that they will be handled through the Building 23 process.

We also need to increase our annual supply budget to accomplish objective 7. See rationale in part 3 below.

2. Progress Reports: In our last program review, the Earth Science program identified 7 Objectives to be completed through Fall 2021, and we also noted the objectives would be difficult/impossible to achieve without release time. If significant progress is not made this year, we may request release time next year.

Earth Science Objectives:

1. Revise current Environmental Science AS degree – no progress
2. Create a Geology AS-T degree – no progress
3. Create a lab class (ENVS 101) to accompany ENVS 115 - completed
4. Develop print and online marketing materials for Earth Science programs – no progress
5. Explore the development of a CTE program of ENVS – no progress
6. Collaborate with STEM Center to improve student success and develop pathways for first semester student – initiated, but not completed
7. Improve student success by increasing hands-on activities and student research opportunities in our classes. – initiated (equipment was purchased), but not completed; additional supply needs were also identified. See part 3 below.

Work was done on 2 of the 7 objectives. Objective #3 was completed. We created an ENVS lab course (ENVS 101), and the course was approved for CSU-GE and IGETC. In addition to creating ENVS 101, we also updated ALL of the courses in the department as part of the scheduled periodic review. Further we created a new GEOG lab course (GEOG 101) to accompany GEOG 100. This course has been requested by students for years. It was created and also approved for CSU-GE and IGETC.

We also made some progress on Objective #7, as some equipment was purchased.

3. Rationale for New Objectives: We will need to increase our instructional supply budget this year to ensure that we can accomplish objective 7. As we packed up our lab to move to the new building, we took the opportunity to look carefully through our existing instructional equipment and supplies. Some of our current materials are outdated and/or worn out. We need to fill gaps in our rock and mineral collection, update landform models, and update instructional posters. It is our understanding that none of these items surpass the cost threshold to be considered equipment, so this needs to be dealt with through the supply budget. We are asking for an additional \$800 to our existing supply budget.

We also need to purchase a set of globes. We are including this in an equipment request. Globes have been part of our equipment request twice over the last 7 years, but we have never ordered them... first due to vendors no longer being available and then second when we started only offering GEOG online. We intend to again offer face-to-face sections of GEOG 100 and new GEOG 101 lab, so the globes are needed.

Annual Update Status: Complete

Objective: Revise Environmental Science AS Degree

The current AS degree was designed prior to the approval of our ENVS AS-T, and now the two degrees are redundant. The new ENVS AS degree will have slightly fewer required science courses and more skill-based electives. The degree will be designed to facilitate transfer to our local CSU ENVS programs, some of which require fewer classes than indicated on the ENVS AS-T. As noted in section 3 of our program plan, there is a need in California (and our local area in particular) for workers with 4-year degrees in ENVS. Further, (as noted in section 7 of our program plan), our ENVS AS-T and ENVS AS degrees may be able to help "catch" students who do not persist in some of the other STEM fields. This objective will be completed when we launch a revised ENVS AS degree.

Objective Status: 2 - Continuing (PR)

Objective Year: 2019-2020, 2020-2021

Estimated Start Date: 06/03/2019

Estimated Completion Date: 12/31/2020

Please select the college goals with which this objective aligns.: Student Completion/Success - Provide educational and student services programs that highlight inclusivity, diversity, and equity in their mission to help students meet their unique educational goals and minimize logistical and financial barriers to success., Community Connections - Build and strengthen collaborative relationships and partnerships that support the needs of, reflect, and enrich our diverse and vibrant local community.

Please select the district goals with which this objective aligns.: District Goal #1 - Develop and Strengthen Educational Offerings, Interventions, and Support Programs that Increase Student Access & Success, District Goal #2 - Establish And Expand Relationships With School Districts, 4-year College Partners, And Community-based Organizations To Increase Higher Education Attainment In San Mateo County

Action Plans

- 2019-2020** - 1. Review 3 or more local CSU ENVS program degree requirements.
2. Develop curriculum outline for the degree.
3. Input into Curricunet and go through the curriculum review process.
4. Work with articulation officer to submit to state. (Active)

Who's Responsible for Completing this Action Plan?: Susan Mahoney

Estimated Completion Date: Fall 2021

2019-2020 - Consider developing a reassign time request to complete program objectives 1-5. Several of these objectives have languished for years due to lack of time. (Active)

Objective: Create Geology AS-T degree

A Geology AS-T degree will help us attract and retain students, and importantly it will help facilitate student transfer to 4-year schools. Currently, we lose interested students to other schools. Students who know they have an interest in geology are less likely to attend Canada, and students who find a passion for Geology after taking a class are likely to move on to a school that offers an AS-T. Additionally, as with our two Environmental Science degrees, a Geology AS-T degree program can likely help "catch" students who are not persisting in other STEM fields (e.g. engineering). (See section 7 above.) Many second or third semester engineering students already have all but one or two of the required Geology AS-T courses completed. The Geology AS-T has few classes, so it is a relatively easy degree to complete and it facilitates successful transfer. Additionally, as noted in section 3 above, there are significant job opportunities in California (and our local area in particular). Interestingly, in many cases professional geologists work alongside professional engineers in consulting firms and at construction sites. This objective will be completed when we launch a

CAN Program Review (Instructional) - Earth Science (Even Year)

GEOL AS-T degree.

Objective Status: 2 - Continuing (PR)

Objective Year: 2019-2020, 2020-2021

Estimated Start Date: 06/01/2019

Estimated Completion Date: 12/31/2020

Please select the college goals with which this objective aligns.: Student Completion/Success - Provide educational and student services programs that highlight inclusivity, diversity, and equity in their mission to help students meet their unique educational goals and minimize logistical and financial barriers to success., Community Connections - Build and strengthen collaborative relationships and partnerships that support the needs of, reflect, and enrich our diverse and vibrant local community.

Please select the district goals with which this objective aligns.: District Goal #1 - Develop and Strengthen Educational Offerings, Interventions, and Support Programs that Increase Student Access & Success, District Goal #2 - Establish And Expand Relationships With School Districts, 4-year College Partners, And Community-based Organizations To Increase Higher Education Attainment In San Mateo County

Action Plans

- 2019-2020 - 1. Create Historical Geology course with lab.
2. Use Geology TMC to create Geology AS-T.
3. Input into Curricunet and go through the curriculum review process.
4. Work with articulation officer to submit to state. (Active)

Who's Responsible for Completing this Action Plan?: Susan Mahoney

Estimated Completion Date: Fall 2020

2019-2020 - Consider developing a reassign time request to complete program objectives 1-5. Several of these objectives have languished for years due to lack of time. (Active)

Objective: Develop print and online marketing materials for Earth Science department programs.

We need to showcase our program and course offerings, and we especially need to advertise our ENVS and GEOL degree programs. (See section 7 above regarding warding off declining enrollment.) Thoughtful marketing materials and a recruitment plan will help increase underrepresented minority students in our classes and degree programs. (See section 8A above.) Recruitment needs to be done on campus and at our local feeder high schools. (See section 1 above.) We also need further collaboration with our college recruiter and our campus support programs (e.g. EOPS, BTO, Promise, etc..)

Objective Status: 2 - Continuing (PR)

Objective Year: 2020-2021

Estimated Start Date: 08/01/2020

Estimated Completion Date: 12/31/2020

Please select the college goals with which this objective aligns.: Student Completion/Success - Provide educational and student services programs that highlight inclusivity, diversity, and equity in their mission to help students meet their unique educational goals and minimize logistical and financial barriers to success., Community Connections - Build and strengthen collaborative relationships and partnerships that support the needs of, reflect, and enrich our diverse and vibrant local community.

Please select the district goals with which this objective aligns.: District Goal #1 - Develop and Strengthen Educational Offerings, Interventions, and Support Programs that Increase Student Access & Success, District Goal #2 - Establish And Expand Relationships With School Districts, 4-year College Partners, And Community-based Organizations To Increase Higher Education Attainment In San Mateo County

Action Plans

2020-2021 - Create marketing materials for Earth Science Department programs, specifically the ENVS AS-T, ENVS AS, and GEOL

CAN Program Review (Instructional) - Earth Science (Even Year)

AS-T. Start and completion dates are contingent on completing the degree programs. Also, we need lots of help from Marketing, as we know little/nothing about creating promotional materials. (Active)

Who's Responsible for Completing this Action Plan?: Susan Mahoney... and help from Marketing

Estimated Completion Date: Fall 2021

2019-2020 - Work with college recruiter to reach out to local feeder schools. (Active)

2019-2020 - Consider developing a reassign time request to complete program objectives 1-5. Several of these objectives have languished for years due to lack of time. (Active)

Objective: Explore the development of a CTE program for ENVS.

Labor statistics indicate there is demand for Environmental Science Technicians in California and especially in the SF Bay Area. Much more research and community networking is needed in order for us to develop a successful program. (See section 3 in our program review.) We will work with the Director of Workforce Development to help develop our programs.

Objective Status: 2 - Continuing (PR)

Objective Year: 2020-2021, 2021-2022

Estimated Start Date: 01/01/2020

Estimated Completion Date: 12/21/2021

Please select the college goals with which this objective aligns.: Student Completion/Success - Provide educational and student services programs that highlight inclusivity, diversity, and equity in their mission to help students meet their unique educational goals and minimize logistical and financial barriers to success., Community Connections - Build and strengthen collaborative relationships and partnerships that support the needs of, reflect, and enrich our diverse and vibrant local community.

Please select the district goals with which this objective aligns.: District Goal #1 - Develop and Strengthen Educational Offerings, Interventions, and Support Programs that Increase Student Access & Success, District Goal #2 - Establish And Expand Relationships With School Districts, 4-year College Partners, And Community-based Organizations To Increase Higher Education Attainment In San Mateo County

Action Plans

2019-2020 - Contact Director of Workforce Development for assistance on how to move forward. (Active)

2019-2020 - Consider applying for reassign time to research and develop this program (Active)

Objective: Collaborate with STEM Center to improve student success and develop pathways for first semester STEM students.

We need to establish in-person and online tutoring in all of our disciplines. This will improve student recruitment, retention and success. (See section 8A above.) Additionally, we plan to work with the STEM Center to develop pathways that include GEOL or ENVS for first year STEM students. This can simultaneously help identify students interested in earth science, provide an option for students who later do not persist in some of the other STEM fields (See section 7 above), and also increase the number of male students taking our classes. (See section 8A above.)

Objective Status: 2 - Continuing (PR)

Objective Year: 2019-2020, 2020-2021

Estimated Start Date: 01/01/2019

Estimated Completion Date: 12/31/2019

Please select the college goals with which this objective aligns.: Student Completion/Success - Provide educational and student

CAN Program Review (Instructional) - Earth Science (Even Year)

services programs that highlight inclusivity, diversity, and equity in their mission to help students meet their unique educational goals and minimize logistical and financial barriers to success., Community Connections - Build and strengthen collaborative relationships and partnerships that support the needs of, reflect, and enrich our diverse and vibrant local community.

Please select the district goals with which this objective aligns.: District Goal #1 - Develop and Strengthen Educational Offerings, Interventions, and Support Programs that Increase Student Access & Success, District Goal #2 - Establish And Expand Relationships With School Districts, 4-year College Partners, And Community-based Organizations To Increase Higher Education Attainment In San Mateo County

Action Plans

2018-2019 - Attend STEM Center Staff meeting and/or otherwise connect with STEM Center on this issue. (They are already working on it.) (Active)

2019-2020 - Contact Learning Center and STEM Center to inquire about how to set up tutoring. (Active)

Objective: Improve student success by increasing hands-on activities and student research opportunities in our classes.

Hands-on activities in our lecture classes increase student interest and success. (See sections 6A and 9B.) Further authentic research opportunities based on student interest are also likely to increase interest and success. To facilitate more hands-on activities and research opportunities we need to purchase laboratory equipment and supplies. We are primarily in need of supplies for water testing and microscopes.

This fall we purchased water-testing equipment with departmental funds, however we need additional supplies (outside of our normal budget) in order to use this equipment routinely and effectively. The water testing kit is used in our Oceanography and Environmental Science classes. It will likely also be used by honors students throughout our department.

Additionally, our microscopes are ancient and no longer usable and lately we have borrowed scopes from Life Sciences and/or omitted activities. This is not sustainable and does not serve students. The scopes are used in Geology and Oceanography classes and will also be used in our future Environmental Science Lab. Additionally, we are requesting one instructor scope where the view field can be seen digitally and projected on the screen. This scope will allow visually impaired students to use the microscope and fully participate in the lab activities as well. Lastly, we are requesting wifi enabled camera for students to upload and share images for student analysis. The camera will also allow the instructor to easily project any students work on the projection screen.

Objective Status: 2 - Continuing (PR)

Objective Year: 2019-2020

Estimated Start Date: 06/01/2019

Estimated Completion Date: 07/31/2020

Please select the college goals with which this objective aligns.: Student Completion/Success - Provide educational and student services programs that highlight inclusivity, diversity, and equity in their mission to help students meet their unique educational goals and minimize logistical and financial barriers to success.

Please select the district goals with which this objective aligns.: District Goal #1 - Develop and Strengthen Educational Offerings, Interventions, and Support Programs that Increase Student Access & Success

Action Plans

2018-2019 -

1. Purchase equipment for 2019/2020 academic year.
 2. Work with honors students, regular students, and other faculty to develop individual or group research projects in our classes.
 2. Document use of new equipment.
- (Active)

CAN Program Review (Instructional) - Earth Science (Even Year)

Who's Responsible for Completing this Action Plan?: Susan Mahoney and Kimberly Kirchoff-Stein
Estimated Completion Date: Spring 2020

Resource Requests

Labware: 12 beakers (600 ml), 2000 ml beaker, 24 wheaton amber rounds w/caps, 10 polypropylene funnels, stir rods - supplies for water testing kit

Type of Resource: Supplies (Items less than \$5000)
Cost: 230

LaMotte Easy Read Titrators - supplies for water testing kit

Type of Resource: Supplies (Items less than \$5000)
Cost: 100

Motic Moticam X Wi-Fi Camera - Allows wifi from microscope to any Bluetooth enabled device. Students can easily project and download their microscope images.

Type of Resource: Supplies (Items less than \$5000)
Cost: 405

Set of 8 durable, accurate globes: six-12 inch globes with clearview mounting and two 12-inch globes with full-swing meridian - Needed for GEOG 100 and new GEOG 101 lab

Status: New Request - Active
Type of Resource: Supplies (Items less than \$5000)
Cost: 1020
One-Time or Recurring Cost?: One-Time Cost
Division/Department Priority: High Priority

Wolfe 7-45x Zoom Stereomicroscopes (\$554.00 each + tax and shipping; need 6) - Our current scopes are so outdated (20-30 years old?) we don't use them. We have taken our classes to the Biology Lab to work, but that is not a sustainable solution.

Type of Resource: Supplies (Items less than \$5000)
Cost: 4100

Wolfe DigiVu DVM 10 Digital Stereomicroscope - For instructor to project on attached viewscreen or projector. Also useful for visually impaired students who previously have not been well-accommodated during microscope activities.

Type of Resource: Supplies (Items less than \$5000)
Cost: 1400