Application for Sabbatical, for Academic Year 2022-23

Oxnard College

Application Deadline: October 15, 2021 at 5 pm.

James M. Danza
_____(sign name/type above line)
James M. Danza
October 13, 2021

Geography, Science Department
Math, Science, Health, PE, and Athletics

Carolyn Inouye
Name of Dean/digital signature

I have notified my dean of my intention to apply for a sabbatical for (choose one)

__X_ Fall 2022
____Spring 2023
____Fall and Spring, 2022-23 (check contract for salary details

On __10/13/2021__ (date of notification to Dean). Email notification is of course the best way to do it.

Application for Sabbatical, Academic Year 2022-23

Please type and submit as an attachment

Full name as it appears on your work records _James Matthew Danza____

Number of years of continuous full time service at VCCCD: 6_____

Number of years of continuous full time service at OC: 6_____

Have you ever had a sabbatical at VCCCD? _No_____ (type yes or no)

How many years ago was your last sabbatical? _None_____

(Please continue to the next page to write your proposal; you may make each section as long as you wish, but please see the examples on page 1 of this packet)

Use as much space as needed.

Project Description:

The purpose of my sabbatical is to increase students' use of technology and critical thinking by incorporating into laboratory manuals: computerized data collection, graphing and web browsing; critical thinking exercises and research; and incorporate modern laboratory and field equipment, so that students gain experience with modern equipment in the physical geography and environmental science and resource management (ESRM) laboratory courses. Both lab manuals will have added critical thinking sections. Additionally, I will provide a plan to add education features, such as exhibits and displays in and around the Letter and Science Building to create excitement and inspiration in our STEM programs.

I authored the laboratory manuals for both physical geography and ESRM courses at OC. The physical geography manual was gradually expanded to replace the publisher's manual over several years. The manual now covers all laboratory topics and is used by OC geography professors. The ESRM lab manual is more focused on online learning currently. Both manuals are edited each semester with minor adjustments/improvements and are published royalty free for use at OC.

The goals of my sabbatical leave are three-fold:

Goal 1: Physical Geography Laboratory Manual. Increase the use of technology and research methods in the physical geography laboratory course and associated laboratory lectures including use of computer technology, incorporate the use of newly acquired laboratory equipment, and add critical thinking sections to the physical geography laboratory manual.

Goal 2: ESRM Laboratory Manual. Add technology and research to the ESRM laboratory course and adapt for in-person learning by incorporating newly acquired laboratory equipment with the addition of a long-term research project using the local environment.

Goal 3: Create a Plan for Educational Features in and around the LS Building Science Wing. To inspire students and offer positive messaging for STEM pathways, I will provide a plan to re-envision the existing science spaces at OC. The plan will provide a vision for the indoor and outdoor spaces to create an atmosphere of excitement and inspiration for STEM.

I am requesting my sabbatical for Fall 2022 instead of Spring 2023 because I don't want to impact Oxnard Middle College High School students who take my physical geography lecture and laboratory courses in the spring.

Your background as it relates to the project and to your role at Oxnard College:

I began teaching at Oxnard College in 2016 as a Professor of Geography and I received tenure in 2020. I expanded my discipline to include ecology so I can teach Environmental Science and Resource Management.

I came to Oxnard College after 21 years as a full-time civilian at Naval Base Ventura County as Planning Branch Head, while concurrently teaching geography for 16 of those years as an adjunct professor of geography at Ventura College.

Currently, I am the sole full-time geography professor at Oxnard College. My primary focus is to expand our student's view of the world with field experiences and community service. I expanded our Environmental Science Program with the addition of the AA-T and a laboratory course. The program has grown significantly in recent semesters.

My primary interest of study is our local rivers and its resources for communities such as water supply, environmental protection, access, education, and active transportation to reduce greenhouse emissions. I work with our students to create opportunities for community service and internships.

Project Objectives:

The objective of my sabbatical is to expand computer technology, add newly acquired laboratory and field equipment to geography and environmental science laboratory courses, add critical thinking and a research section to both courses and to prepare a plan that will provide a vision for the indoor and outdoor spaces of the LS building inspiration for STEM.

Project Methodology:

Goal 1: <u>Physical Geography Laboratory Course Objectives:</u>

1. Create Excel spreadsheets for data collection and graphing with sample formulas and design.
2. Add a section on Geographical information systems using governmental or private GIS system
3. Add use of internet web browsing for appropriate sources of data, and information
4. Add a section to the scientific method exercise on critical thinking
   4.1. Create a pseudoscience detector card that students can carry with principles of critical thinking.
   4.2. Review articles on strategies to incorporate critical thinking methods into the laboratory manual.
   4.3. Write a special section on critical thinking and add to and restructure existing lab exercises to accommodate critical thinking exercises.
5. Update related laboratory lectures to introduce the above changes.

Goal 2: <u>Environmental Science and Resource Management Objectives:</u>

1. The laboratory manual was written with an emphasis on online instruction. As the course transitions to in-person for the first time, the manual will be centered on using the OC Marine Center and nearby outdoor environment. Additionally, new laboratory and field equipment will be incorporated into the lab exercises. The new equipment is newly acquired and while other equipment is being purchased this fiscal year and others appear on resource requests.
2. Introduce computer technology to ESRM laboratory course by increasing the number of labs exercises with added computer functions such as:
    2.1. Create Excel spreadsheets for data collection and graphing with sample formulas and design.
    2.2. Use of internet web browsing for appropriate sources of data, information, and update the ESRM lab manual so students can follow the step and complete the work on the prepared templates.
3. Expand and revise the ESRM laboratory manual and include critical thinking elements.
4. Expand the manual to include new laboratory and field equipment for use as a capstone project for the course where student choose specialized equipment for their experiment. Equipment is on-hand or is being ordered currently. Additionally, the new OC STEM Grant may provide additional equipment that can be incorporated into laboratory exercises. Procedures will be described for each laboratory exercise so students can follow the correct protocol and the scientific method.
5. Develop a long-term multi-semester research project for the opportunity for students to collect data and test water samples over multiple years. The collection of the data may be useful in making a year over year comparison or building a large data set
6. Update related laboratory lectures to introduce the above changes.

Goal 3: Create a Plan for Educational Features in and around the LS Building Science Wing:

1. Evaluate the current setting for potential improvements where students can view science equipment, posters, and information about the sciences, how scientist contribute to the world, and career opportunities for graduates. Some of the equipment and displays have been submitted as resource requests.
2. Provide a plan for the following improvements:
    2.1. Outdoor landscape areas that could be used as exhibits for science disciplines, such as plants, boulders, and garden features. These areas can also be used for teaching.
    2.2. Assess how the building architecture can be enhanced with large exhibits for display, such as use of high-bay ceiling for hanging exhibits or posters.
    2.3. Review indoor sitting areas where students can view posters of student work projects or learn about science programs and degrees.
    2.4. Coordinate with faculty from the various science and math disciplines and the STEM center to fill the current glass cases to fresh and relevant material for display.
    2.5. Provide locations for additional display cases to include passive and interactive exhibits.

2.6. Provide locations for the use of large screen LCD displays to advertise events and science program offerings.

Product of the sabbatical (a paper, a film, an exhibit, etc.):

Geography Laboratory Manual:

1) Computer files developed for specific labs, such as templates made in Excel.
2) Laboratory Manual chapter on GIS with instructions on access an online program.
3) The hard copy of the lab manual will have added instruction on completing the computer work.
4) Update related laboratory lectures to introduce the above changes.

ESRM Laboratory Manual:

1) Computer files developed for specific labs, such as templates made in Excel
2) The hard copy of the lab manual will have added instruction on completing the computer work.
3) The hard copy of the lab manual will have added instruction on completing field sampling and observation in the field near the OC Marine Center.
4) Additional pages added to the existing lab manual.

Update related laboratory lectures to introduce the above changes.

1) Provide a detailed plan of location, examples from other campuses, site/floor plan, and rough order of magnitude cost.

How do you plan to share your sabbatical results at Oxnard College? Do you have plans for sharing your results more broadly?

The laboratory manuals for geography and manuals will be published and available for use by students and faculty that teach these courses.

I will hold a sharing session to assist faculty members that use Geography lab manual. I am the only ESRM instructor at this time, however the improvements will be presented to the Counselors meeting so they are aware of the updates to the ESRM program.

For Goal 3, I will provide a written plan with diagrams and photos. I will present to the Science Department/College administration as appropriate to garner support for the projects in the plan.

Work plan and schedule (Show the committee the steps in your plan and approximately when you will complete each one, including the product or method of sharing your work).

Goal 1 for Geography

Task	Date	Product	Sharing
1. Create Excel spreadsheets for data collection and graphing with sample formulas and design, with instructions	September 2022	Excel Spreadsheet for Lab Titles: Measurement, Latent Heat data, Climate Change, Hydrology	Laboratory Manual and files Sharing Session
2. Add a section on Geographical information systems (GIS).	September 2022	Add to map lab exercise a basic GIS component using a governmental online GIS system	Laboratory Manual Sharing Session
3. Use of internet web browsing for appropriate sources of data, information, and citation	October 2022	Enhance Titles: Map reading, various sections related to atmosphere and weather systems, Plate Tectonics (earthquakes)	Laboratory Manual Sharing Session
4. Application of critical thinking in lab manual and a pseudoscience detector	October 2022	Add or convert questions that encourage critical thinking Cut-out card	Laboratory Manual Sharing Session Laboratory Manual
5. Update related laboratory lecture	December 2022	PowerPoint Lecture to accompany lab	Share with faculty as needed.

Goal 2 for ESRM

Task	Date	Product	Sharing
1. Adapt the current lab for in-person instruction, utilize the OC Marine Center environment, and include new equipment	October 2022	Enhance and expand Lab titles: Add newly acquired equipment for; Field Environmental Survey, Capstone Project (Various equipment sets), Energy, Urban Environment Report	Laboratory Manual

2. Create Excel spreadsheets for data collection and graphing with sample formulas and design. Use of internet web browsing for appropriate sources of data, information	November 2022	Excel Spreadsheet for Lab Titles: GIS, Ecosystem Producers, Habitat Survey, Water Quality, Air Quality Enhance Lab Titles: Wetland Ecosystems, NEPA	ESRM Laboratory Manual and computer files for download.
3. Expand and revise the ESRM laboratory manual and include critical thinking elements	November 2022	Add or convert questions that encourage critical thinking Cut-out card	Laboratory Manual Separate handout for events
4. Expand manual to include new laboratory and field equipment for use as a capstone project	November 2022	Enhance existing or add new laboratory exercises	For use by students
5. Develop a long-term multi-semester research	December 2022	Add laboratory exercise for a long-term project	Laboratory Manual
6. Update related laboratory lectures to introduce the above changes.	December 2022	PowerPoint Lecture to accompany lab	For use by students

Goal 3: Increase student inspiration and offer positive messaging for STEM pathways

Task	**Date**	**Product**	**Sharing**
1. Evaluate current building attributes and use by students	May 2022	Photos and diagram	N/A
1.2 Work with faculty to fill existing glass cases	September 2022	Exhibits in glass cases	Faculty Meeting
1.3 Research how other universities use outdoor and indoor spaces	October 2022	Photos and notes	Add to plan
1.4 Work with faculty on concepts for displays	November 2022	Notes	Faculty Meeting
1.5 Complete diagrams and a floor plan for exhibits	January 2022	Diagrams	Add to plan
1.6 Provide a complete plan with justification,	January 2022	Plan document	Completed plan and presentation to

site plans, diagrams and examples of displays			Dean and College Admin

Value of Project (here, given an overall statement of how this project will benefit you, personally and professionally, as well as how it will benefit others).

I will benefit professionally by having a lab manual that matches exactly what I believe is best for our students and is relevant to students. Making academic work relevant to student's life is a great teaching technique. Many lab exercises will be specifically based on the local environment including the OC Marine Center. I take pride in teaching about environmental matters in our County and around the world.

I benefit personally by furthering my knowledge of the fields of Geography and Ecology. Writing and updating a book is a tremendous task that engrosses you. The quality must be high to preserve the integrity and our academic institution.

Geography and environmental science are multidisciplinary sciences, so my research and planning for the exhibits will deepen my knowledge of the many sciences that relate to my disciplines.

Faculty who teach physical geography will use the revised lab manual. I will provide a forum on the changes and to discuss the lab manual and methods of instruction.

The College and the District will benefit with increase prestige that another faculty member has authored a high quality and up to date laboratory manual for two disciplines. Also, the reputation of Oxnard College will further grow as an excellent institution for laboratory and field sciences.

Students will benefit from a laboratory manual that is updated with the use of current computer technology and methods that are similar to industry, which prepares them for careers and transfer to a university. New laboratory equipment, which was recently acquired and maybe further expanded with the new OC STEM Grant, will dive deeper into the complexities of the science and will support research, critical thinking and analysis necessary in today's careers.

Critical thinking will be emphasized to provide students life-long skills on how to interpret information and data and analyze results to form solid fact-based conclusions.

Students will receive messaging about STEM that will inspire them to continue their education and consider the sciences as their discipline. When waiting for classes, studying, or walking the halls and outdoor area, they will gain appreciation for STEM through viewing student projects,

interesting displays of equipment, and posters. OC will gain notoriety and respect with displays of student projects that demonstrate to the public the value OC has to offer in academics.