**Annual Assessment Report for 2020-2021 AY**

Reports completed on assessment activities carried out during the 2020-21 AY will be due September 30th, 2021, and must be e-mailed to the Director of Assessment, Dr. Douglas Fraleigh (douglasf@csufresno.edu).

Provide detailed responses for each of the following questions within this word document. Please do NOT insert an index or add formatting. Furthermore, only report on two or three student learning outcomes even if your external accreditor requires you to evaluate four or more outcomes each year. Also, be sure to explain or omit specialized or discipline-specific terms.

Department/Program: Geography and City & Regional Planning

Degree: BA Geography/BS City and Regional Planning

Assessment Coordinator: Dr. Mohan B. Dangi

1. **Please list the learning outcomes you assessed this year.**

Students will be able to perform quantitative analysis and interpret the results.

1. **What assignment or survey did you use to assess the outcomes and what method (criteria or rubric) did you use to evaluate the assignment?** *Please describe the assignment and the criteria or rubric used to evaluate the assignment in detail and, if possible, include copies of the assignment and criteria/rubric at the end of this report.*

The assignments of GEOG 30 (Introduction to Spatial Statistics) in spring 2021 were used to assess the outcome. A total of 19 scored assignments were included in the sample. The assignments covered four areas—sampling and frequency distribution (Assignment 1), descriptive statistics and mean center (Assignment 2), test of difference (Assignment 3), and spatial difference (Assignment 4). All the assignments were based on a given set of data that mirrors a real-world setting. In addition to the lectures, detailed instructions were given to each assignment, and in-class assistance was provided for ensuring proper learning outcomes.

The criteria to evaluate the assignments include:

1. The extent to which the assignments were submitted in a timely manner,
2. The extent to which the required tasks were completed,
3. The extent to which the quantitative analyses were performed correctly, and
4. The extent to which the results were interpreted correctly

**Assessments**

Criterion a: The extent to which the assignments were submitted in a timely manner

The assignments were submitted in a timely manner. Among the assignments, 15 of 19 (79%) were submitted by the due date, 3 within one week after the due date, and 1 within three weeks after the due date. Timely submission is important because the assignments are structurally related. Proper completion of the first assignment is required for the completion of later assignments. The weekly execution of lab hours monitoring the progress of the assignments facilitated the timely submission of the assignments.

Only 1 of the expected 20 submissions (5 students X 4 assignments) has yet to be received. The relevant student was alerted of the situation and was advised to complete the assignment as soon as possible through email. The student did attend the in-class lab sessions and is in the process of catching up with the assignment as of this writing.

Criterion b: The extent to which the required tasks were completed

A total of 14 of the 19 (74%) first submissions completed all required tasks. The 5 first submissions with inadequacies in some areas associated with the very first assignment were advised to resubmit. The five resubmissions were completed with all the areas of inadequacies addressed generally within one week of the advice.

Criterion c: The extent to which the quantitative analyses were performed correctly

Given the weekly in-class monitoring of the progress of the assignments, 17 of the 19 (89%) assignments were performed correctly with a minimum score of 9.3 out of 10. Only 2 assignments had one of the areas (either t-test or mean nearest neighbor distance) derived incorrectly. One of the two assignments had a score of 9.4 out of 10, the other 8.0 out of 10.

Criterion d: The extent to which the results were interpreted correctly

A total of 17 of the 19 (89%) assignments were interpreted correctly. The two assignments with incorrect interpretations are associated with hypothesis testing. The two assignments accepted the wrong hypothesis either because of incorrect calculation or the consideration of the negative sign of the Z value. The students were advised of the incorrect interpretations of the results through comments in the scored work.

1. **What did you learn from your analysis of the data? Please include sample size (how many students were evaluated) and indicate how many students (number or percentage instead of a median or mean) were designated as proficient.**

The data showed that all 5 students in the class are proficient in the subject matter. The number of incorrect calculations is very few and is due to the involvement of large exponential terms in the calculation process. The number of incorrect interpretations is also very few and is due to carelessness. One incorrect interpretation was associated with incorrect calculation, and the other was the consideration of the negative sign of the Z value.

1. **What changes, if any, do you recommend based on the assessment data?**

The course operates on the basis of pre-recorded lecture videos to allow full comprehension of the statistical concepts through repeated viewing. The assignments follow very closely with the elaborations in the lectures, and instructional videos with detailed step-by-step procedures were provided to guide the proper completion of individual assignments. Weekly in-class lab hours were in place to assist students and to monitor the progress of students on assignments. This configuration functions very well with the absolute majority of assignments completed on schedule and in a satisfactory manner. The analysis above shows that the deviations (incorrect calculation and incorrect interpretation) are minor and are statistically normally distributed. No changes to the current configurations and delivery methods are suggested.

1. **If you recommended any changes in your response to Question 4 in last year’s assessment report, what progress have you made in implementing these changes? If you did not recommend making any changes in last year’s report please write N/A as your answer to this question.**

N/A.

1. **What assessment activities will you be conducting during the next academic year?**

The Department is planning to offer GEOG 167 – People and Places – A Global Perspective – in the spring semester of 2022 and we would like to assess Goal 1, Outcome 2: Students will explain and interpret the distribution, processes and linkages between culture, economy, urbanization, agriculture, politics, and language.

1. **Identify and discuss any major issues identified during your last Program Review and in what ways these issues have or have not been addressed.**

Action #1: SOAP

We have greatly improved our SOAP each year since the last program review. In fact, at one point our SOAP was the most complete in the college. We have done an alumni survey every three years.

Action #2: Curriculum Review

The Review Team recommended to the Department to modify its curriculum by eliminating the “Major Areas of Concentration” and replacing them with a set of required Upper Division Core courses. We have created Upper Division Core courses for our new City & Regional Planning option. While we do not have an Upper Division Core for our Geography major, we have simplified the curriculum such that students now take one course from each area of concentration.

Action taken: Also, the Department revised its degree program so that there are six essential core courses that are taken by majors:

GEOG 2. Introduction to Cultural Geography

GEOG 4. World Geography

GEOG 5. Physical Geography: Global Concepts, Weather and Climate

GEOG 7. Physical Geography: The Earth's Surface

GEOG 30. Introduction to Spatial Statistics

GEOG 141. GIS I: Data Display and Manipulation

And, any 18 units of geography, or city & regional planning (CRP) courses; with the stipulation that at least twelve (12) units be upper-division. The number of units in the major was also reduced from 42 to 36.

The new degree program, BS in City & Regional Planning has been deployed; however, the program is currently being revised to better address the needs of local students, and potential employers. The current program includes major requirements of 42 units, additional requirements of 22 units, and electives of 18-21 units for a total of 82 to 85 units, plus GE requirements, university requirements, and other units required to satisfy the 120 units for a Bachelor’s degree. The revised program will be 36 units, in addition to GE requirements, university requirements, and other units required to satisfy the 120 units for a bachelor’s degree.

Action #3: Increase the number of majors

The Review Team recommended that the Department find creative ways for maintaining the FTES at the same time that it increases the number of majors. The Team also stated that “a structural shift away from spending high quality and scarce resources on G.E. courses than spending them on majors is needed to improve and grow the undergraduate program, and ultimately reinstate a Master’s program”. Increasing majors has still been a struggle; however, we hope our increased efforts in the area of planning will bring new interest to the Department.

In the meantime, we continue to:

• Participate in university outreach events as they become available.

Action taken: Many of the faculty have participated in ‘Preview Days’ and ‘Dog Days’ activities. Additionally, faculty have participated in University Outreach events with community college transfer counselors in order to facilitate the transfer of community college students into our existing programs.

• Renew contacts with the local community colleges.

Action taken: Jon McPhee, Geography Instructor and Department Chair of Social Sciences for Clovis Community College (CCC), is now a member of the Department’s advisory board, and is providing a connection between the Department and CCC. Sean Boyd, a former lecturer in the Department, is now a full-time Geography Instructor at Fresno City College (FCC) and can provide a connection between this Department and that campus.

• Organize our Geography Forum Lecture Series.

Action taken: None.

• Explore the possibility of making a recruitment video.

Action taken: None.

• Complete the ongoing modernization of the Department website.

Action taken: The revision has been done, and is currently ongoing.

• Organize community events for Geography Awareness Week.

Action taken: None.

• Enforce all University and Department mandatory advising schedules to keep students on track 4.

Action taken: Except for career advising, faculty are no longer directly advising majors with regard to their programs. All program advising is done in the COSS Advising Center.

• Serve as the home base for the National Geographic Bee.

Action taken: The Department continues to be the ‘home base’ for the California State Geographic Bee.

The cancellation of major courses with enrollments that exceed ten (10) students places an unnecessary burden upon our majors. Such cancellations make it exceedingly difficult to grow a program due to a lack of student confidence in being able to graduate in a timely manner. To address this problem, the Department has been forced to convert even more major courses into GE courses so that they would have a sufficiently high enrollment that would prevent them from being cancelled.

In recent years, the Department has hired a human geographer to strengthen our human geography course offerings. Additionally, to address the retirement of one of our senior faculty members, a tenure-track search for a physical geographer has been initiated to replace him. The Department faculty hope that the successful candidate would also be able to teach two of the Department’s GIS courses, and allow existing planning faculty to focus on the deployment of planning course for the BS in City & Regional Planning program. It is hoped that growth in these fields of study will be attractive to prospective majors.

Action #4: Strengthen Research

The Department faculty continues to be very active in many research areas including air quality, recreational planning, environmental remediation, waste management, water quality, environmental policy analysis, health and diseases, and international business. Much of the research addresses concerns in Fresno, as well as other cities in the San Joaquin Valley. The faculty plans to continue to engage in research that will benefit the community in many ways.

Action #5: Expand Program by adding more Minors

In addition to our minor in Geography, and a minor in Meteorology, the previously existing minor in Urban Studies has been converted into a minor in City & Regional Planning.

Action taken: Although the Department has been informed that we may not create any minors until further notice, we have created a Certificate of Special Study in Broadcast Meteorology (in cooperation with the Department of Media, Communications and Journalism), and a Certificate of Special Study in Environmental Planning.

Action #6: Master’s in City & Regional Planning

Although our past efforts to develop a Master’s degree in City & Regional Planning did not come to fruition, we have now deployed a B.S. in City & Regional Planning.

**Geography 30 – Introduction to Spatial Statistics**

**Department of Geography and City & Regional Planning**

**Spring 2021 Class Assignment 5 (Relation)**

**Project Due Date: April 21, 2021**

**Objectives**

• Practice the use of correlation coefficient to examine whether there is a significant relation between education and income in the study area

* Apply linear regression technique to predict the income of a person with given years of education

**Tasks**

Correlation Coefficient

1. Use the 32 cases in the spatial sample to derive the mean for the education variable (here we refer this mean to **). Detail the steps of calculation clearly. Use calculator. Do not use Excel.

2. Tabulate the values of *xi - *, (*xi - *)2,*yi - *, (*yi - *)2,and (*xi - *)(*yi - *) clearly. Use calculator. Do not use Excel. Here you will need the mean for the income variable (here we refer this mean to ) from Assignment 2.

3. Use the information from the tabulation above, derive the correlation coefficient (*r*) manually. Detail the steps of calculation clearly. Use calculator. Do not use Excel. State the strength and direction of the relation between the two variables.

4. Use the correlation coefficient derived above to test whether the relation presents and is significant in the population:

(a) State the null (*Ho*) and research (*HA*) hypotheses in both statistical and literal terms

(b) Derive *t* (obtained). Detail the steps of calculation clearly. Use calculator. Do not use Excel

(c) Use thelecture notes to find out the value of *t* (critical) at 0.95 level of confidence (two-tailed). State the degrees of freedom (*df*) term for the test. Indicate acceptance of the null (*Ho*) or the research (*HA*) hypothesis and the basis of the decision

1. Establish a statistical statement on the presence and significance of the relation between education and income in the population

Linear Regression

5. (a) Structure the relation between the two variables in conceptual form. State the names of the two variables in the conceptual linear regression equation.

1. Use the information in the tabulation of Step 2 above and the values of ** and **, manually derive the regression coefficient *b* and the intercept term *a* for the linear regression equation. Detail the steps of calculation clearly. Use calculator. Do not use Excel
2. Structure the *empirical* linear regression equation with the conceptual form established in 5(a) and the regression coefficient and intercept obtained in 5(b) above.

6. Use the correlation coefficient derived in (3) to test whether the regression equation is significant in the population:

(a) State the null (*Ho*) and research (*HA*) hypotheses in both statistical and literal terms

(b) Derive *F* (obtained) manually. Detail the steps of calculation clearly. Use calculator. Do not use Excel

(c) Use the lecture notes to find out the value of *F* (critical) at 0.95 level of confidence. State the degrees of freedom (*df*) term**s** for the test. Indicate acceptance of the null (*Ho*) or the research (*HA*) hypothesis and the basis of the decision

1. Establish a statistical statement on the significance of the regression equation in the population

7. Estimate the level of income for a person with 26 years of schooling. Detailed the steps of calculation clearly. Use calculator. Do not use Excel. Put forward a statistical statement on your finding that is of interest to the community.

**THINGS TO SUMBIT**

1. Elaborations, tabulations, and calculations in 1 through 3.

2. Required items for *t* test in (4).

1. Elaborations, tabulations, and calculations in (5).
2. Required items for *F* test in (6).
3. Prediction and statement on your finding.