

REVISIONS TO DISCIPLINES LIST FORM
PLEASE TYPE

(Note: Only typed forms will be accepted.)

DATE SUBMITTED: 9/30/2021

DISCIPLINES LIST TITLE: Geographic Information Systems (GIS)

This proposal is for a New discipline
 Revision to existing discipline

Reason for the proposal Create a new discipline
 Update language in existing discipline to reflect new terminology
 Make minimum qualifications in existing discipline more restrictive
 Make minimum qualifications in existing discipline less restrictive

PROPOSAL LANGUAGE: (If this is an existing minimum qualification, please include the original language and change using strikeouts and *italics*).

Proposed Discipline: Geographic Information Systems
Organization: Cuesta College

Proposed Minimum Qualifications: (paste language out of disciplines book)
Any bachelor's degree or higher
AND
Two years of professional experience

OR

Any associate degree
AND
Six years of professional experience

PROPOSAL EVIDENCE:

Any Disciplines List proposal must have the following evidence, which is essential because it provides the rationale about why the change is needed as well as inform the field that the research has been completed to ensure that the change is necessary. A lack of documentation about the need of Discipline List Revision may cause the proposal to be delayed or rejected by the Executive Committee. Please use the following check list to ensure all you have conducted all necessary research.

Required investigation of the following and statement of findings:

- Contacted an associated professional organization to determine support of proposal
- Included evidence of degrees within the proposed revision of the discipline or new discipline.
- Provided a list of the titles of the degrees and programs to document the need for a new or revised discipline using the below criteria:
 - Minimum of three degrees

- Regionally accredited institutions (all public institutions in California)
 - Disciplines in the Master’s List requires evidence of the availability of masters degrees
 - Disciplines in the Non-masters List requires evidence of the availability of degree, certification, and/or professional experience, if necessary
- Provided statewide need documented by evidence to show a change is necessary and not merely a response to a unique need of one college, district or region. Demonstrated a balance of need across the state and included a discipline seconder from another district.
 - Explained the impact of proposal across the state using a list the pro and con arguments and including refutation of the con arguments
 - Provided other evidence such as significant changes to the field that requires a change to the Disciplines List.
 - Provided a ½ page written rationale to be included in public documents.

Support from Associated Professional Organizations

See attached letter from:
GIS Certification Institute

Demonstrated Balance of Statewide Need and Discipline Seconder from Another District

The proposer is seconded by Allison Meezan (seconder), Professor of Geography and GIS, Foothill College.

Testimonies:

Name	College/Organization	Testimony	Position
Allison Meezan	GIS, Foothill College	A GIS-specific minimum qualification would allow colleges to hire a faculty to teach <i>GIS classes only</i> . This would circumvent the uncomfortable situation our department (Geography) found itself in many years ago when we hired a GIS expert (a GIS manager for a local public agency) to teach a GIS class, and granted the instructor (who had a MS in Engineering) equivalency in "Geography" which is the discipline our GIS classes were housed in at the time. The following quarter an administrator offered the GIS instructor a World Regional Geography class when we had a last-minute opening (because the instructor was cleared with Geography minimum qualifications). In a complete reversal, I have also found myself unable to hire a faculty to teach GIS because they did not have a Master's	Support

		degree, despite being a nationally recognized expert in GIS.	
Kenneth Yanow	Geography, Southwestern College	I support the effort to create a minimal qualification to teach in the discipline of GIS. The new GIS Discipline proposal will lead to that effort and enable more qualified instructors the ability to teach in this field.	Support
Hugh Howard	Science and Engineering, American River College	I support the proposal by Feride Schroeder at Cuesta College to create a new discipline for Geographic Information Systems (GIS). GIS is a multidisciplinary field that draws talented instructors from a wide variety of disciplines, including Geography, Geology, Engineering, Business, Forestry, Fire Science, Urban Planning...and the list goes on. At American River College, we have found it very difficult to recruit qualified instructors, simply because they do not hold a Master's Degree in Geography, or a related field with sufficient graduate units in Geography. We have had little luck approaching the issue with equivalencies. We also support the idea of setting more flexible standards, such as a Bachelor's and two years of experience, assuming that we can exercise greater scrutiny during the application and interview processes. For example, a person with a B.A. in English with two years of teaching experience (and no professional GIS experience) could be removed from consideration, while a person with a degree in a more related field and two years of professional GIS experience could potentially be hired.	Support
Candice Weber	GIS Faculty, College of the Desert	GIS needs to be recognized as its own discipline and the faculty involved should meet a different set of qualifications for this unique discipline.	Support
Chris Cruz	Department Chair- Faculty Park	This has been a long time coming. At our institution when I first put courses in	Support

	Management, Geospatial Technology and UAS Technology, West Valley College	Geospatial Technology through curriculum, they were listed under Park Management (Forestry/Natural Resources) in 2000 the was no interest within our Geography Program to have these courses. The minimum qualifications as a Master's in Geography or GIS would disqualify many current instructors who teach any of the Geospatial (GIS) related courses.	
Warren Roberts	Rio Hondo College, GIS Program Coodinator	We have wonderful industry users that would be wonderful educators to give our students marketable practical skills to our students and mentor them /inspire on to 4 year or masters.	
Bret Clark	Faculty and Division Chair of Physical Science, Cuesta College	GIS is a technical discipline and minimum qualifications should reflect the technical skills needed to teach this subject which is often mastered through professional/industry experience.	Support

Impact of Proposal Across the State

The GIS discipline does not currently exist, and it is important for this growing field and industry. We expect a submission into the minimum qualifications handbook will allow schools from across the state to more accurately find and hire the proper personnel and faculty for their programs.

Pro:

Geographic Information Systems curriculum provides students with skills to enter the workforce and advance their existing skillsets. Students would benefit from faculty that have industry experience and are using technology on a regular basis. This pool of "industry experts" come from a variety of educational backgrounds, and many possess only a bachelor's degree. The new GIS discipline would also benefit colleges because there is currently no GIS discipline, or an obvious alternative, for hiring minimum qualifications. A second issue that this proposal would address would be continuity in minimum qualifications for hiring GIS faculty. A final issue is that if a Master's in Geography is required, there are many current GIS faculty that could no longer teach these courses. Currently, colleges are selecting a discipline that is the best fit at their institution and this varies from one college to another. GIS classes are presently taught in geography, geology, earth science, engineering, computer science, agribusiness/agricultural sciences, CAD, business, and more. A faculty member who is applying to teach GIS courses at different colleges may be asked to meet different minimum qualifications based on the differing current disciplines assigned to GIS courses at the different colleges. A GIS discipline will help standardize the hiring process and clarify acceptable qualifications for the colleges and the job applicants.

Con:

This change would create much larger hiring pools that may require greater scrutiny. However, proper evaluation can identify candidates that have the foundational and technical knowledge required. The recruitment of candidates with professional experience may limit the number of local candidates that apply for the job if they are employed in the work force. However, the program may be fully online and remote instruction may enable the college to hire candidates from outside the area. One other drawback is that graduates of a Geography or GIS graduate program without any professional experience may not qualify. However, most graduate programs do require a thesis or research program which would grant equivalency for the required two years of experience.

Rationale

The current minimum qualifications do not allow individuals with professional experience or degrees in GIS to teach these courses. Colleges across California have difficulty recruiting faculty due to the lack of appropriate minimum qualifications currently available. GIS professionals with Bachelor's degrees and those with a Master's degree in GIS have experience with emerging technologies that should be included in the curriculum. Traditional geographers or earth scientists with a Master's degree may not possess these skills. The requirement of a Master's degree in GIS would limit our hiring pool due to the lack of GIS Master's programs in California. Currently, there are only 7 institutions offering a GIS Master's degree in California, and 81 California Community Colleges offer courses in GIS.

A major objective of GIS programs is to provide students with the foundational knowledge and cutting-edge skills to enter the workforce. The demand for GIS specialists continues to grow. The Bureau of Labor statistics estimates job growth for this sector to be faster than average at 5 – 7%. The median wage for GIS Technologists and Technicians is \$92,870 per year. A one-year certificate or Associate's degree in GIS prepare graduates for immediate entry into the workforce as GIS technicians or specialists.

References:

Geotech Center META-DACUM (<https://geotechcenter.org/dacum-results.html>)

Geotech Center National Program Locator (<https://www.geotechcenter.org/geotech-center-national-program-locator.html>)

Indeed 2021 Salary Search, ZipRecruiter Salary (based on positions posted on these sites)

The Future of GIS, University of Southern California 2021 (<https://gis.usc.edu/blog/the-future-of-gis/>)

O*NET Online, Summary Report for GIS Technologists and Technicians 2021

(<https://www.onetonline.org/link/summary/15-1299.02?redir=15-1099.07>)


SUBMISSION

Once a proposal is received by the Senate Office, it is reviewed by staff to ensure that all the information is complete and includes the revision, contact information, appropriate signatures and rationale. The Senate Office will also check to ensure that the proposal has not previously been considered and rejected by the delegates at a plenary session or, if it has, it is supported by a new rationale. The proposal is then sent to the S&P Chair to review the Senate Office information and to ensure that the proposal meets the initial requirements of the Disciplines List review process as well as to verify that the proposal is not being submitted to deal with a district-specific problem that does not apply broadly. If there are any concerns with the proposal, the S&P Chair, working with the S&P Committee, will immediately follow up with the initiator.

The contact person (or a designee) will be required to attend hearings where the proposal is presented. These hearings are typically held at the ASCCC plenary sessions. It should be noted that the contact person is responsible for investigating and documenting the need for changes to the Discipline List.

Please reference the Disciplines List Handbook for information about the process including the role of the initiator, the Standards and Practices Committee, the Executive Committee, and the delegates. This handbook can be found on our website at <http://asccc.org/disciplines-list>.

Contact person (author of proposal) Feride Schroeder
Phone number (please provide at least two numbers) 805-709-3646 or 805-346-3232
Email fschroed@cuesta.edu
Secondar (must be from another District) K. Allison Meezan (Foothill College)
Phone numbers: (650) 949-7166, (650) 949-7777 _____
Email meezankaren@fhda.edu

Signature of College Academic Senate President¹ 

College Cuesta College
Email carl_sims@cuesta.edu Date approved by College Academic Senate 9/24/2021

OR

Organization _____
President _____
Date Approved by Organization _____ Phone for President _____

RETURN FORM TO: The Academic Senate for California Community Colleges
One Capitol Mall, Suite 340, Sacramento, CA 95814
Email: disciplineslist@asccc.org

¹ By signing this document, the Senate President is certifying that the required investigation and statement of findings have been sufficiently addressed.

GIS Programs at California Community Colleges

1. Cuesta College (Certificate)
2. College of the Redwoods (Certificate)
3. Shasta College (Certificate, Associate's)
4. Sierra College (Certificate)
5. Folsom Lake College (Certificate)
6. American River College (Certificate and Associate's)
7. Cosumnes River College (Certificate)
8. Santa Rose Junior College (Certificate)
9. Napa Valley College (Certificate)
10. Foothill College (Certificate and Associate's)
11. Palomar College (Certificate and Associate's)
12. Southwestern College (Certificate)
13. Columbia College (Certificate and Associate's)
14. Diablo Valley College (Certificate and Associate's)
15. City College of San Francisco (Certificate)
16. Ohlone College (Certificate)
17. West Valley College (Certificate and Associate's)
18. Bakersfield College (Certificate)
19. San Diego Mesa College (Certificate)
20. Mount San Jacinto College (Certificate and Associate's)
21. Coastline Community College (Certificate and Associate's)
22. Santiago Canyon College (Certificate and Associate's)
23. Cypress College (Certificate)
24. Pasadena City College (Certificate)
25. Chaffey College (Certificate)
26. San Bernadino Valley College (Certificate)
27. Rio Hondo College (Certificate)
28. Los Angeles Valley College (Certificate)
29. Ventura College (Certificate)

GIS classes (in addition to the programs listed above)

1. Butte College
2. Feather River College
3. College of the Siskiyous
4. Mendocino College
5. Lake Tahoe Community College
6. Sacramento City College
7. Solano Community College
8. San Joaquin Delta College
9. Contra Costa College
10. College of Marin
11. Merritt College
12. Laney College
13. Chabot College

14. Skyline College
15. Cañada College
16. DeAnza College
17. Mission College
18. Evergreen Valley College
19. Modesto Junior College
20. Merced College
21. Cabrillo College
22. Gavilan College
23. Fresno City College
24. Hartnell College
25. Monterey Peninsula College
26. West Hills College
27. College of the Sequoias
28. Santa Barbara City College
29. San Diego City College
30. Grossmont College
31. MiraCosta College
32. College of the Desert
33. Saddleback College
34. Orange Coast College
35. Santa Ana College
36. Long Beach City College
37. Los Angeles Harbor College
38. Fullerton College
39. El Camino College
40. Glendale Community College
41. Citrus College
42. Crafton Hills College
43. Mount San Antonio College
44. East Los Angeles College
45. Los Angeles Trade-Technical College
46. Santa Monica College
47. Moorpark College
48. Los Angeles Mission College
49. College of the Canyons
50. Oxnard College
51. Los Angeles Pierce College
52. Allan Hancock College

GIS Master's Programs

1. Humboldt State University
2. California State University, Stanislaus
3. San Diego State University
4. California State University, Long Beach

5. University of Redlands (private)
6. California State University, Los Angeles
7. University of Southern California (private)



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30 September 2021

The Academic Senate for California Community Colleges
One Capitol Mall, Suite 340,
Sacramento, CA 95814

To Whom It May Concern,

On behalf the GIS Certification Institute I would like to support the efforts of Dr. Feride Schroeder to create a GIS discipline in the Academic Senate at Cuesta College.

The US Department of Labor has identified the geospatial industry as one of the fastest growing professions in the US. Qualified professionals are needed and programs like the one proposed at CCC help provide low cost and fast/efficient programs where individuals can earn a degree or certificate in one to two years. A program like this one is ideal in preparing existing professionals to incorporate geospatial analysis into their existing work. I can offer no better example than COVID and the importance of spatial analytics in tracking and understanding the problem as it unfolded. Many epidemiologists and health professionals began to incorporate geoanalytics into their workflows and the need for health professionals to become quickly and properly educated became obvious.

Programs like the one proposed at the CCC can help support and grow the geospatial industry. My recommendation in building this program is to make sure that the experience of the candidates considered matches the Learning Objectives and Skills taught in each course. This requires faculty that are trained in cutting edge technology and concepts. GIS professionals already working in industry have the most day-to-day experience using the technology and conducting analytics. They know which skills and competencies are most important and will give students a great advantage as they enter the workforce.

The GIS Certification Institute (GISC I) is a non-profit organization that provides the GIS community with a complete certification program, leading to GISP® (Certified GIS Professional) recognition. We offer the only certification for the broad geospatial profession. Certification is important in moving our professional forward as certification requires continual education and contributions to the profession. GIS professionals, particularly those who are certified, play a prominent role in the geospatial and related industries. It is important for professionals to have the GISP designation and certificate and associate's degree programs like those in the California Community Colleges (CCC) can help GIS professionals prepare for certification and careers.

Sincerely,

Anthony A. Spicci GISP CGMP

Executive Director, GIS Certification Institute