GEOG-115: INTRODUCTION TO GEOGRAPHIC INFORMATION SCIENCE

Effective Term
Fall 2025

BOT Approval Date
03/20/2025

Discipline
GEOG - Geography
Course Number
115

Course Title
Introduction to Geographic Information Science

Short Title
Introduction to GIS

Credit Status (CB 04)
D - Credit - Degree applicable

Units

Lecture Units
1.50

Lab Units
0.50

Total Units
2.00

Hours

Lecture Contact Hours
24-27
Out of Class Hours Lecture
48-54

Lab Contact Hours
24-27
Out of Class Hours Lab
0.00

Total Contact Hours
48 - 54

Total Out of Class Hours
48 - 54

Total Student Learning Hours
96 - 108

Is this an existing Extensive Lab?
No

Do you want to propose this for Extensive Lab?

No

Distance Education

Yes

Distance Education

Distance Education Type

Both Fully Online and Hybrid Online

Fully Online Delivery Requirements:
a. Students must be notified via the college schedule of classes and the syllabus for the class if proctored tests are required for this course
b. Any planned face-to-face meetings, such as an orientation or study session, must be optional
c. The MSJC curriculum committee requires the use of accessible, asynchronous discussion as a component of every fully online course

Are you using publisher content?

No

Regular Substantive Interaction

Instructor-to-student, student-to-student, and student-to-content contact shall be distributed in a manner that will ensure regular substantive interaction (RSI) is maintained not only weekly but also for the duration of the course. Instructor interactions should be equivalent in time, quality and consistency to the engagement students would receive in a face-to-face course—for example, through announcements, discussion participation, personalized feedback, video messages, or other instructional communications. Instructors are expected to be responsive to student inquiries within a 24-72 hour time frame excluding holidays. RSI will be maintained through a variety of methods: • Orientation - Students must be oriented to the online and face-to-face portions at the start of the course. • Announcements - Announcements using the course management system must be posted at least weekly to keep students current on course events, due dates, materials, etc. • Discussion Forums - Content-related discussion forums within the designated CMS will include appropriate instructor participation and will be initiated and maintained, with timely feedback provided. Instructors are required to monitor the discussions and related activities to provide guidance and direction. Open-ended discussion boards may be used to further learning and interaction. • MSJC Communication – Instructor will use MSJC-administered communication tools (such as email or the designated CMS communication tools) to regularly communicate with and provide ease of access to students. • Timely Feedback - Timely feedback on student work will be provided by the instructor, which may include comments and/or rubrics, within the Grades area of the designated CMS. • Scheduled Meetings – Hybrid and synchronous courses will meet at regularly scheduled times. ADA Compliance - All course interactions and content must be designed with accessibility in mind and meet ADA requirements.

Additional Regular Substantive Interaction

Optional schedule synchronous meeting are available at various times during the semester. These meetings are to facilitate a forum during which students can interact with themselves and with the instructor. These meetings are recorded in accessible formats and made available within the course shell for asynchronous viewing by students. Student Discussion sessions include organized student to student content as well as student to instructor content. These discussion sessions are incorporated into the course management shell and are part of the course's graded material. In addition, a student to student "lab partner" asynchronous forum is available in which students can ask questions, share information, discuss projects, etc. This forum is monitored by the instructor but is student driven.

C-ID (Admin Only)

C-ID GEOG 155

Catalog Description

This course prepares students with the geographic concepts necessary for technical application of Geographic/Geospatial Information Systems (GIS). Through practical applications in GIS students will use scientific methods of inquiry and computer added technology technical methods of inquiry to analyze tabular and spatial data for geographic trends, patterns and relationships. Topics include data structure, acquisition, integration, and manipulation.

Codes

TOP Code (CB 03)

2206.10* - *Geographic Information Systems

CIP Code
45.0702 - Geographic Information Science and Cartography.

Repeatability Code
No

Grading Option
Letter grade OR P/NP

Minimum Qualifications

Minimum Qualifications	And/Or
Biological Sciences (Masters Required)	Or
Ecology	Or
Environmental Technologies	Or
Geography (Masters Required)	Or
Engineering (Masters Required)	Or
Computer Science (Masters Required)	Or
Earth Science (Masters Required)	End

Learning Objectives

Learning Objectives

Learning Objective
1.Describe the scientific method and explain how it is related to the various traditional sciences of earth science, geology, geography and meteorology.
2. Compare and contrast various ways of depicting the earth's continental of oceanographic structures.
3. Compare and contrast conventional mapping technology to GIS automated technology.
4. Formulate and interpret geographically referenced data.
5. Compare and contrast how GIS is used in science, business and government.
6. Identify the basic hardware and software requirements needed for GIS applications.
7. Compare the distribution of human populations with respect to: a)Socio-economic Influences; b)Ethnic and Racial Considerations; and c)Gender aspects of Geospatial Information

Learning Outcome Information

Course Learning Outcomes

Learning Outcome
1. The student will describe the scientific method and explain how it is related to the various traditional sciences of earth science, geology, geography and meteorology.
2. The student will compare and contrast conventional mapping technology to GIS automated technology.
3. The student will distinguish and describe historical and basic cartographic principles in map production.
4. The student will exercise reflective thought in consideration of geographical referenced data.

Content

Course Lecture Content

I. GIS as a Scientific Endeavor
- A. GIS and Its Relationship to Other Physical and Natural Science
- B. History of Geospatial Information
  - 1. Exploring the World
  - 2. Biotic and Abotic Aspects of Geospatial Distribution

3. Distribution of Human Population -"Who, Where, Why"
   a) Socio-economic Influences
   b) Ethnic and Racial Considerations
   c) Gender aspects of Geospatial Information
C. Survey of Current GIS Applications
   1. Use of GIS in Decision Making
D.GIS Data
   1. Mapping GIS Data
      a) Mapping aspects of human diversity
      b) Racial and ethnic aspects of human populations
      c) Gender aspects in human spatial distributions
   2. Presenting GIS data
   3. Attribute Data

II. Introduction ArcGIS PRO
A. Queries
B. Spatial Joins
C. Raster Analysis
D. Network Analysis
E. Geocoding
F. Coordinate systems
G. Editing
H. Geodatabases
I. Metadata

III. Statistical Analysis of GIS Output

IV. Introduction to Advanced Spatial Analysis Concepts

Course Lab Content

I. ArcGIS Overview
A. Software and Hardware Requirements for GIS
B. ArcGIS

II. Introduction to Data Structures
A. Define Data Requirements
   1. Aspects of human diversity as represented in space and time.
   2. Equity of human spatial organization.
B. Tables in ArcGIS
C. Layers in ArcGIS
D. Spatial Joining tables

III. Geoprocessing
A. Raster analysis
B. Network analysis
C. Geocoding

IV. Data management
A. Editing data
B. Editing and Topology
C. Geodatabases
D. Metadata

Methods of Instruction

Method

Activity

Integration

Computer lab activities consist of hands-on applications of real world scenarios of GIS models, problem-solving methods and decision-making techniques in various disciplines. These activities prepare students to define and evaluate problems associated with acquisition and accuracy of data used in GIS.

DE Adaptations for MOI

Practical GIS applications based on real world scenarios are demonstrated by instructor online. Student completes assignments individually and in facilitated laboratory groups and submit the assignments using the CMS (course management system). Laboratory activity instructions and information will be in the course management system using an accessible format.

Method

Field Trips

Integration

Students will attend a local GIS conference, meeting or other digitally facilitated professional meeting. This experience is designed to aid in students' understanding of scientific method and explain how it is related to the various traditional sciences of earth science, geology, geography and meteorology as well as to experience how GIS is used in science, business and government.

DE Adaptations for MOI

Students may participate in digitally facilitated, such as accessible video conferencing platforms, field trips individually or in groups by attending a GIS conference, meeting, or online presentation. A variety of on-line, asynchronous, accessible field trip opportunities will be made available in the CMS (course management system). Recommended field trips will meet accessibility standards.

Method

Lecture

Integration

Lecture presents GIS terms and concepts, methods and applications allowing students to evaluate the contribution of different branches of science to the technological achievements of humans. Lectures help students compare and contrast conventional mapping technology to GIS automated technology as well as giving them an awareness of the associated how physical, biological and earth sciences impact geospatial information.

DE Adaptations for MOI

Web based lectures with links to references and examples prepare students with GIS terms and concepts, methods and applications. Lectures may be presented in both written and/or video, pod-cast or other digitally facilitated forms. Lecture information will be available in the CMS, course management system, using accessible formats.

Method

Observation and Demonstration

Integration

Demonstrations and observation of real-world scenarios that focus on GIS models, problem-solving methods and decision-making techniques in various disciplines. These observation and demonstration activities help students to define and evaluate problems associated with acquisition and accuracy of data used in GIS as well formulating and interpreting geographically referenced data.

DE Adaptations for MOI

Demonstrations and observation information will be available in the course management system using accessible formats. These assignments may use accessible teleconferencing media or prerecorded videos that focus on various GIS models, problem-solving methods and decision-making techniques. These instruction assignments will be made available using the CMS.

Method

Film/video Viewing and Discussion

Integration

Web based and in-class instructional videos pertinent to current topics are reviewed, evaluated and discussed. Videos cover a variety of topics from describing the scientific method and explaining how it is related to the various traditional sciences of earth science, geology, geography and meteorology to comparing and contrasting how GIS is used in science, business and government.

DE Adaptations for MOI

Accessible films, videos and other forms of visual and audio presentations will be available asynchronously through the CMS. Discussion session will require students to discuss this material both among themselves and with the instructor. Information specific to the analysis of the individual assignments will be available in the course management system using accessible formats where appropriate.

Method

Discussion

Integration

Class discussion of various aspects of human diversity as represented in space and time and how this data gives a better understanding of human diversity and equity in social decision making.

DE Adaptations for MOI

Discussion will be facilitated in the course management system using accessible formats. The discussion may use accessible teleconferencing media or prerecorded videos that focus on various GIS models, problem-solving methods and decision-making techniques. The students may respond to the discussion in various formats made available using the CMS.

Methods of Evaluation

Method

Capstone Project

Integration

From in-class demonstrations and activities involving real-world scenarios students prepare and present a final GIS "Story Map" project. This project is designed to incorporate each of the course learning objectives and includes not only written dialog on the physical and natural science implications but on the human sciences contributions to various aspects of the project. Students are evaluated on the design, research, GIS methods used, artistic and accuracy of data presentation as well as appropriate topic relating to current or historic geospatially influenced events.

DE Adaptations for MOE

Demonstrations and activities involving real-world scenarios are presented within the CMS. Students prepare and present a final GIS project using a variety of different digital/teleconferencing media, live chat and/or discussion forums in the CMS, course management system. Presentations are recorded asynchronously or given synchronously when available. In either format students are evaluated by their peers and by the instructor. All projects must meet accessibility standards. Evaluation/grading and constructive comments are supplied to students using the CMS grading system as well as in both informal and formal asynchronous student-student and student-instructor discussion sessions. As an example in the discussion sessions students work on the who will be responsible for the various aspects of the final project and which aspects represent a professional quality GIS Story Map. The instructor monitors the discussions to make sure students are progressing appropriately to the completion of the final semester Capstone project and provides constructive suggestions where appropriate. Evaluation is done within 72 hours of due date for assignments.

Method

Exams/Tests

Integration

Exams use a variety of question formats to assess knowledge of GIS terms and concepts, methods and applications related to the course learning outcomes as well as technical processes and procedures and historical and current context information.

DE Adaptations for MOE

Online exams use the applications found in the CMS to access a variety of question formats to assess knowledge of GIS terms, concepts, methods, and applications. Evaluation/grading and constructive comments are supplied to students using the CMS grading system as well as in both informal and formal asynchronous discussion sessions. Students are encouraged to use informal student to student discussions of examination materials. Student/Student/Instructor formal discussion sessions are organized to review materials covered in the examinations. As an example, in the comment section of the CMS procedure the instructor comments on a student's misunderstanding of the geospatial difference between Mercator map projections and Gall-Peters map projections. Then in the examination discussion session the instructor reviews the ten (10) most common map projections and explains how these different projections, as well as over a hundred others, are dealt with using the ArcGIS Pro software applications. Evaluation is done within 72 hours of due date for assignments.

Method

Homework

Integration

Homework exercises focus on GIS software techniques, applications, concepts and terms. In particular students will define and evaluate problems associated with acquisition and accuracy of data used in GIS and formulate and interpret geographically referenced data.

DE Adaptations for MOE

Weekly exercises focus on GIS software techniques and applications and are submitted to the CMS, course management system, or other accessible approved appropriate software for grading. Information and specific instruction on how to complete the homework assignments will be available in the course management system using rubrics developed for individual homework assignments. All homework is provided in accessible formats for applicable. Evaluation/grading and constructive comments are supplied to students using the CMS grading system as well as in both informal and formal asynchronous discussion sessions. Evaluation is done within 72 hours of due date for assignments.

Method

Oral Presentation

Integration

GIS story map assignments include an oral presentation made by individual and/or groups of students. These story maps represent accumulation of knowledge developed at various times throughout the course addressing different aspects of the course learning objectives and technical information presented in the laboratory portion of the class.

DE Adaptations for MOE

Oral presentations are recorded for asynchronous submission in the CMS course shell and/ or are presented in synchronous meetings designed for these activities using digital meeting technologies such as accessible video conferencing platforms. Presentations are required to be made available in the course management system using accessible formats. Evaluation/grading and constructive comments are supplied to students using the CMS grading system as well as in both informal and formal asynchronous discussion sessions. Evaluation is done within 72 hours of due date for assignments.

Method

Class Participation

Integration

Students are required to participate in weekly classroom discussions on the scientific method and explain how it is related to the various traditional sciences of earth science, geology, geography and meteorology.

DE Adaptations for MOE

Asynchronous Discussion forums are made available, in accessible formats, using the CMS on scientific method. The instructor monitors the quantity and quality of participation. Evaluation/grading and constructive comments are supplied to students using the CMS grading system as well as in formal asynchronous discussion sessions within the CMS. Evaluation is done within 72 hours of due date for assignments.

Method
Quizzes

Integration
Periodic quizzes covering current topics related to conventional mapping technologies.

DE Adaptations for MOE
Quizzes on mapping technology are available asynchronously in the CMS. All quiz materials and questions are developed using accessibility standards. Evaluation/grading and constructive comments are supplied to students using the CMS grading system as well as in both informal and formal asynchronous discussion sessions. Formal grading is done within the CMS grading application. Evaluation is done within 72 hours of due date for assignments.

Method
Research Projects

Integration
From in-class discussions and outside readings evaluate how data about gender definitions, racial and ethnic aspects of human populations can provide valuable information related to diversity, equity and inclusion.

DE Adaptations for MOE
Research projects may use internet resource for investigations. References are made available within the Course Management System. Completed projects are submitted using various formats within the CMS. Evaluation is made by the instructor and communicated to students using various formats within the CMS

Assignments

Assignment Type
Reading

In-class and/or outside of class
In-class
Outside of class

Formative or Summative
Formative

Assignment
Using the Internet, library, textbook, or other professional/academic resources, search and read GIS story maps which include digital maps, map geographic data, downloadable geographic and descriptive population data, socio-economic, cultural, gender, and other pertinent data to reflect diversity of individuals and populations represented in the geospatial environment. Read and summarize story maps from at least 10 websites.

How assignment will be adapted in online format
Appropriate internet sources are suggested within the CMS. These sources may include searchable library resources as well as professional journal articles, symposium proceedings, and other on-line resources. Assignments are accessible in the CMS. Summaries of the readings are submitted asynchronously using the CMS. Evaluation/grading and constructive comments are supplied to students using the CMS grading system as well as in both informal and formal asynchronous discussion sessions. Formal grading is done within the CMS grading application. Evaluation is done within 72 hours of due date for assignments.

Assignment Type
Writing

In-class and/or outside of class
In-class

Outside of class

Formative or Summative

Summative

Assignment

For the capstone project, use the U.S. Census tabular database and spatial GIS project file provided to design a meaningful inquiry into demographic changes related to population diversity issues of gender, ethnicity, race, culture, gender identity, age, religious or other pertinent socio-economic properties. You may select any area in the United States, or other countries, and a scale of tract, block, county or state. Apply analytical techniques from previous exercises and class demonstrations to promote, classify and select database features, or overlay, query and edit layers. To complete the assignment, submit a screen capture showing your folder and file organization and submit a map layout as an interactive PDF. Present your findings to the class as a 20-minute presentation following the rubric in the syllabus for the best possible grade.

How assignment will be adapted in online format

Capstone projects are presented and may be submitted asynchronously using the CMS. Presentations may be made asynchronously using the CMS or other accessible, appropriate video presentation formats. Projects are graded using a rubric specifically designed for the details of the Capstone project. Evaluation/grading and constructive comments are supplied to students using the CMS grading system and formal asynchronous discussion sessions. Student/student, student/instructor review of Capstone projects takes place in informal discussion sessions within the CMS. Formal grading is done using the CMS grading application. Evaluation is done within 72 hours of due date for assignments.

Assignment Type

Writing

In-class and/or outside of class

In-class
Outside of class

Formative or Summative

Summative

Assignment

Apply analytical techniques to laboratory assignments from exercises and class demonstrations to promote, classify and select database features, or overlay, query and edit layers.

How assignment will be adapted in online format

Laboratory assignments are presented, using appropriate accessibility standards, within the CMS. Individual and group assignment may be submitted asynchronously in a variety of different formats within the CMS. Informal "laboratory group" discussions are made available within the CMS to promote student/student interaction in the completion and evaluation of assignments. Evaluation/ grading and constructive comments are supplied to students using the CMS grading applications and formal asynchronous discussion sessions. Formal grading is done within the CMS grading application. Evaluation is done within 72 hours of due date for assignments.

Assignment Type

Other

In-class and/or outside of class

Outside of class

Formative or Summative

Summative

Assignment

View a web based, accessible, instructional videos pertinent to a current lecture topic. Review, evaluate and discuss the relevancy of the video to geospatial concerns. Describe how the video pertains to a variety of topics from describing the scientific method and explaining how it is related to the various traditional sciences of earth science, geology, geography, and meteorology to comparing

and contrasting how GIS is used in science, business and government or other pertinent career interests. Summarize the video in a minimum two (2) page discussion and submit it for evaluation and grading.

How assignment will be adapted in online format

Selected accessible videos are made available within the CMS or links to accessible videos are provided within the CMS. Assignments are submitted, evaluated, and graded within the CMS. Students access instructor evaluations and constructive comments within the CMS grading and discussion applications. Evaluation is done within 72 hours of due date for assignments.

Assignment Type

Reading

In-class and/or outside of class

In-class
Outside of class

Formative or Summative

Summative

Assignment

Read and summarize the ESRI article, "CalEnviroScreen: A Geographic Approach to Environmental Justice, May 2022; https://www.esri.com/about/newsroom/blog/how-pollution-impacts-california-communities/. Discuss how the article uses maps to apply an environmental justice framework around issues of diversity, equity and inclusion.

How assignment will be adapted in online format

Access to the article will be made available within the course management system. Summaries of the readings are submitted asynchronously using the CMS. Evaluation/grading and constructive comments are supplied to students using the CMS grading system as well as in both informal and formal asynchronous discussion sessions. Formal grading is done within the CMS grading application. Evaluation is done within 72 hours of due date for assignments.

Course Materials

Textbooks

GIS Fundamentals: A First Text on Geographic Information Systems, Sixth Edition Sixth Edition, 2019, Paul Bolstad, ISBN-13: 978-1593995522
ISBN-10: 1593995520

Other Resources

ESRI GIS Certification Training https://www.esri.com/training/certification/

Open Educational Resources

David DiBiase (2019). Nature of Geographic Information Compass Open Ed. ISBN: na

Class Size Information

Class Size

32

Class Size Category

G - Large lab 32

Diversity and Inclusion

Course Design and Materials: Course will incorporate diverse perspectives, authors, and examples that reflect a variety of cultures, identities, and lived experiences. Instructional materials will be reviewed regularly to ensure representation, inclusivity, and alignment with equity-minded practices across disciplines.

Inclusive Learning Environment: Instructors will establish classroom norms and policies that promote respect, civil discourse, and belonging in both online and face-to-face classes. Clear expectations for communication and engagement will support a learning space where all students feel valued and heard.

Accessible Instruction: Course content will be delivered using accessible design. Materials will follow accessibility guidelines within the CMS, including captioned media, readable document formats, and multiple means of engagement to support diverse learning.

Equitable Teaching Practices: Instructors will use transparent and grading criteria, varied assessment methods, and timely feedback to promote fairness and student success. Opportunities for revision, reflection, and multiple demonstrations of learning may be incorporated when appropriate to the discipline.

Culturally Responsive Pedagogies: Instructional strategies will encourage critical thinking about diverse perspectives and systems of power relevant to the course content. Faculty will foster opportunities for students to connect course material to real-world contexts.

Ongoing Reflection and Improvement: Faculty will engage in continuous professional development related to IDEAA principles and reflect on course practices using metacognition to identify opportunities for increased equity, inclusion, and accessibility.

Explain how diversity and inclusion(e.g., gender, culture/race, sexuality, etc.) is infused into the course.

The course operates with a foundational intention of diversity and inclusion. Included in the objectives, is the necessity of teaching diverse content from multicultural and intersectional perspectives across all aspects of the course content. Emphasis is placed on the articulation of how contributions to the discipline of Geospatial Science offer students' opportunities to foster empathy, expose variant interpretations, and exhibit diverse societal concerns represented the geographic distribution of humans around the globe. The course content is designed to align objectives with and to create opportunities for students from a variety of backgrounds to hone new skills while acknowledging and honoring their existing knowledge base.
The course emphasizes the need to investigate not only geophysical aspects of geospatial distribution but as well the socio-cultural perspective, as it pertains to race, gender identity, sexual orientation, and cultural differences. Students are expected to consider cultural, economic, political, and gender-based positioning in developing assignments affecting the geospatial distribution of human activities. Students are expected to consider not only how “time and place” affect human distribution but to provide “historical context” to better capture the deeper connections between socio-historical forces and the geospatial distribution. Assignments are formatted to allow students to reflect on their cultural frame of reference and to investigate their personal perspectives as to the geospatial aspects of the communities to which they associate.

Describe how assignments, instruction, evaluation, course content, and interactions are contextualized for diverse learners promoting an equitable course.

To better support diverse learners, formative and summative active learning strategies are represented in the exploration of geospatial concepts and analytical methodologies. These strategies include in-class and out-of-class assignments that explore the geospatial constructs in relationship to equity and diversity. Lecture and laboratory instruction, included opportunities for discussion and class activities where students can share with the class and evaluate their own cultural experiences through the application of geospatial information science materials and methods. Various methods of evaluation, feature the necessity of formative and summative assessments, designed to accommodate diverse learner assessment styles, align with the course objectives and content. Lectures, discussions, group activities, assessments and final project support the infusion of student feedback and interaction with the instructor.

Interactions

Explain how the course will incorporate student-to-student interaction.

Students are encouraged to work together to solve geospatial problems both in lecture and laboratory situations. Student are required to participate in weekly student to student discussion sessions on topics related to the course materials. Discussions for online, DE sessions use the CMS discussion format options. Students both on-campus and in DE sessions evaluate and navigate the ambiguity of a variety of different cultural, ethnic, racial, gender, sexual orientation and other factors contributing to the geospatial distribution of human population. Class activities, lectures and assignments are environments in which the classroom community can bring in their own cultural experiences in addition to practicing the application of new concepts from diverse socio-cultural perspectives.

Explain how the course will incorporate instructor-to-student interaction.

The instructor will have instructor to student interactions not only in lecture but in lab as well. Laboratory assignments for online, DE sessions use the CMS discussion format options. For students both on-campus and in DE sessions, laboratory instruction is designed to include group as well as intensive instructor student one-on-one instruction in the use of the ArcGIS professional software. To better support a diverse range of learners, instructors are encouraged to incorporate formative and summative active learning strategies. Laboratory exercises develop a variety of formative process using ArcGIS Pro software. These formative exercises culminate in a Capstone semester "GIS Story Map" project

Explain how the course will incorporate student-to-content interaction.

Student to content interaction is incorporated in both lecture and laboratory presentations and assignments as well as weekly laboratory and a Capstone semester project. Students are introduced to content in the lecture portion of the class and interact with the content in many ways including summarizing multimedia presentations, short quizzes, discussions, and semester examinations. Students are required to apply lecture content to laboratory assignments. Laboratory assignments require students to produce ArcGIS output using information discussed and developed in lecture. This output represents a variety of data presentations all of which include mapping and data analysis of specific geospatially related questions; what resources are being explored; who (the diversity of populations) are impacted by the resources; where the resources are congregated and the historical data influencing the geospatial distributions. Interactions in on-line and hybrid session use appropriate methods within the CMS.

Explain how the course will incorporate student-to-self interaction (metacognitive).

The goal is to support students in connecting their personal experiences with the terms and concepts presented in the course and to validate the student's life experience by seeing themselves in the material and assignment requirements. Class activities, reading, lecture, discussions and student technical story mapping projects encourage and allow students to explore various interpretations and understandings of their individual relationships to geospatial organization related to their own diversity, socio-economic status, gender, ethic-racial background and other aspects of their own identity and history. Interactions in on-line and hybrid session use appropriate methods within the CMS.

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