

# GEOG-131: REMOTE SENSING

Effective Term

Fall 2023

CC Approval

3/17/2023

AS Approval

4/11/2023

BOT Approval

4/20/2023

COCI Approval

5/12/2023

## SECTION A - Course Data Elements

Send Workflow to Initiator

No

CB04 Credit Status

Credit - Degree Applicable

Discipline

Minimum Qualifications	And/Or
Earth Science (Master's Degree)	Or
Geography (Master's Degree)	Or
Computer Information Systems (Any Degree and Professional Experience)	

Subject Code

GEOG - Geography

Course Number

131

Department

Geography (GEOG)

Division

Science and Engineering (SE)

Full Course Title

Remote Sensing

Short Title

Remote Sensing

CB03 TOP Code

2206.10 - \*Geographic Information Systems

CB0= Basic Skills Status

NBS - Not Basic Skills

CB0> SAM Code

D - Possibly Occupational

Rationale

To develop new GIS courses fo

## SECTION B - Course Description

### Catalog Course Description

Introduction to remote sensing of the Earth. Content includes physical principles on which remote sensing is based, history and future trends, sensors and their characteristics, image data sources, and image classification, interpretation and analysis techniques. An end of semester project will allow students to apply learned skills. Course material used are based upon the United States Department of Labor's Geospatial Technology Competency Model (GCTM).

## SECTION C - Conditions on Enrollment

### Open Entry/Open Exit

No

### Repeatability

Not Repeatable

### Grading Options

Letter Grade or Pass/No Pass

### Allow Audit

Yes

## Requisites

### PrerequisiteEsF

Completion of GEOG-120 with a minimum grade of C.

### Advisory PrerequisiteEsF

Completion of GEOG-121 with a minimum grade of C.

## Requisite Justification

### Requisite Description

Course in a Sequence

### Subject

GEOG

### Course #

120

### Level of Scrutiny

Content Review

Upon entering this course, students should be able to:

1. Describe and demonstrate proficiency in field data collection, and the construction of spatial data from known locations.
2. Proficient in collecting, recording, and utilizing spatial data and databases.
3. Develop and manage a GIS database.
4. Demonstrate an understanding of the fundamentals of GIS data storage and interface.

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## SECTION D - Course Standards

### Is this course variable unit?

No

### Units

3.00000

### Lecture Hours

54



- a. Frame Capture
  - i. Photographic Cameras
  - ii. Digital Cameras
  - iii. Videography
- b. Scanners
  - i. Across-track Scanners
  - ii. Along-track Scanners
  - iii. Hyperspectral Scanners
- 5. Satellite-based Sensors in Visible and Infrared Wavelength
  - a. Low-spatial Resolution Sensors
  - b. Medium-spatial Resolution Sensors
  - c. High-spatial Resolution Sensors
- 6. Active Sensors: Radar and Lidar
  - a. Active Microwave (RADAR) Remote Sensing
    - i. Radar Interferometry
    - ii. Passive Microwave Radiometers
  - b. Lidar
    - i. Lidar Principles
    - ii. Lidar-derived Vegetation Information
    - iii. Lidar-derived Urban Information
- 7. Sonar
  - a. Side-scan sonar
  - b. Multibeam sonar
  - c. Global Seafloor Topography
- 8. Aerial Imagery – Visual Interpretation
  - a. Nature of Aerial Images
  - b. Ground Verification and Processing
    - i. Control Points
    - ii. Ground Truthing
- 9. GIS Integration
  - a. Raster to Vector
  - b. Image Formats
- 10. Remote Sensing Applications
  - a. Agriculture
  - b. Forestry
  - c. Geology
  - d. Oceanography
  - e. Archaeology
  - f. Military
  - g. Urban Infrastructure

## Methods of Instruction

### Methods of Instruction

Types	Examples of learning activities
Activity	Land cover/land-use mapping, disaster management such as pre- and post-flood events, earthquakes, tsunamis, and other natural disasters as well as human impacts such as community and people displacement.
Lecture	Interactive lecture, introducing context and application of data collection tools and format.

### Instructor-Initiated Online Contact Types

- Announcements/Bulletin Boards
- Discussion Boards
- E-mail Communication
- Video or Teleconferencing

### Student-Initiated Online Contact Types

- Discussions
- Group Work



Do you wish to propose this course for a CSU General Education Area?

No

Do you wish to propose this course for a UC Transferable Course Agreement EJC-TCAF?

No

### Course Codes (Admin Only)

ASSIST Update

No

CBPO Cooperative Work Experience Status

N - Is Not Part of a Cooperative Work Experience Education Program

CBPP Course Classification Status

Y - Credit Course

CBP3 Special Class Status

N - The Course is Not an Approved Special Class

CBQ3 Funding Agency Category

Y - Not Applicable (Funding Not Used)

CBQ4 Program Course Status

Program Applicable

Allow Pass/No Pass

Yes

Only Pass/No Pass

No

Reviewer Comments

Stacey Howard EshowardFEWed, 07 Dec 0000 05:3=:04 GMTF: Articulation Officer: GEOG 120 is appropriate for UC-TCA; this course is not offered at UC and not eligible for UC transfer.

Stacey Howard EshowardFEFri, 07 Dec 0000 05:07:ST GMTF: Articulation Officer: GEOG 120 is appropriate for UC-TCA; this course is not offered at UC and not eligible for UC transfer

Stacey Howard EshowardFEFri, 07 Dec 0000 05:P4:SS GMTF: Articulation Officer: GEOG 131 is found at CCCs approved as transferable to UC. Submit for UC-TCA.

Seth Anderson Esethe.andersonFETue, P4 Feb 0003 P=:00:30 GMTF: Rollback: Review grading option and add specific entry skills (formatted liCiu G ar Ura