

CT 211: Introduction to Geographic Information Systems (3 Credits)

Course Description

This course looks at Geographic Information Systems and how they are used. Students will look at all aspects of GIS in terms of design, maintenance, analysis and industry usage. This class will teach students GIS concepts while applying those concepts to unit assignments. Student will apply all concepts to a final project.

Prerequisite: CAD 120

Textbooks

The GIS Book. George Korte. 5th edition. Copyright 2001. OnWord Press.

You will need to download the most current Autodesk AutoCAD MAP 3D Software. If this is your first CAD installation, follow the steps posted in the Announcements. The procedure changes every year so if something isn't working correctly, email me with questions or concerns.

To get a copy of Map 3D...

1. You need an NDSCS email account. If you do not have an NDSCS account, go to <https://secure.ndus.nodak.edu/services/> and register for one.
2. With an NDSCS email account, go to <http://students.autodesk.com/?nd=register> - This will register you for a student account with Autodesk. Once registered you can download Map 3D
3. If all of this fails, you can also download a full version of Map 3D in a 30 trial version here - <http://usa.autodesk.com/adsk/servlet/pc/index?siteID=123112&id=13842112> (Be aware that this version will expire in 30 days so get your student version within those 30 days. I would recommend loading Map 3D, even if you have Civil 3D, you may run into some differences during the course. Both products will run side-by-side. You will also need MS Office Pro 2003. In several Units you will be using MS Access and Excel. The NDSCS Bookstore also carries the MS software. ([Click to go to bookstore site](#))

Learning Outcomes/Course Objectives

Upon completion of this course, the student will be able to:

- Understanding GIS terms and concepts
 - Understand the difference between CAD and GIS file
 - Explain processes involved in moving CAD to GIS and back again
 - Explain projections, coordinate systems and datums
 - Demonstrate usage of shape files.
 - Demonstrate FDO data connections
 - Analyze spatial and attribute data in multiple programs
 - Understand aerial photography and their usage
 - Understand concepts of GIS design
 - Understand concepts of GIS maintenance
 - Demonstrate the ability to create thematic maps
 - Analyze GIS data through spatial queries

- Analyze GIS data through attribute queries
- Understand basic cartography elements
- Explain what metadata is and how it is used
- Understand ethical usage of GIS

Course Policies and Procedures

Access Policy: Computer Failures and Viruses

Online students must maintain computer access at all times to the online course. Lack of computer access as an excuse for late work or missed exam/quiz will NOT be accepted. Review the [Access Policy](#) to learn how you can take a proactive approach to your online success.

Student Attendance

Regular attendance and completion of all assignments, on time and as scheduled, is important to your success in this course. As your instructor, if I am unexpectedly unavailable and may be delayed in reviewing or correcting assignments, I will notify the class of this as a sign of courtesy and respect. An online student who does not submit class work for ten (10) consecutive calendar days may be dropped from the course. Efforts to contact inactive students are attempted as soon as each semester begins; however, if there is no response from the student and inactivity continues, a drop will be enacted.

The following action may be taken regarding irregular attendance:

- 1) Dropped from a course or program;
- 2) Course grade may be lowered;
- 3) Termination of financial aid assistance;
- 4) Cancellation of registration;
- 5) Restriction from extra-curricular activities; or
- 6) Any other judgments deemed necessary.

[See the entire NDSCS Attendance Policy.](#)

Online Discussions

The online discussions are required activities, and full participation is essential for your success of this course. These discussions are an equivalent to the traditional classroom discussions. You are expected to read all postings, and interact with each other. Refer to the specific Discussion expectations under Discussion Grading Criteria.

Online Student Participation and Conduct Guidelines

The practices of courtesy and respect that apply in the traditional classroom also apply online. However, the expectations and practice differ in the online classroom to greater extent. Review the Online Student Participation and Conduct Guidelines to learn of these expectations.

Assignments

Each unit will build onto the next one and will be accessible according to the posted Schedule. Assignments and quizzes within each chapter are due within specified time frames. Refer to the Schedule for specific due dates. Assignments not completed by the specified deadline but submitted late will have 10% of grade points deducted at instructor's discretion. No points will be assigned for incomplete assignments. Be prepared to spend at least four (4) hours per week in the online class, studying, and completing assignments.

Submitting Assignments

All assignments should be turned in via Dropbox unless otherwise specified. You are strongly encouraged to make hard copies of your assignments and communications with the instructor to avoid losing data in the case of technical issues. At the first sign of problems, contact your Internet Service Provider (ISP) immediately. It is your responsibility to access the class on another computer in the event of hardware or software problems. If your problems are not cleared up within 12 hours, contact the instructor to make other arrangements.

Student-Instructor Communications

While an online class is available 24 hours a day and offers greater flexibility for the student and instructor, keep in mind that your instructor will not be available 24 hours a day. I will check my email, voicemail, and Cyber Office messages on a regular basis, but there may be times when I am unavailable due to other commitments and job responsibilities. I will respond to email, voicemail, or Cyber Office messages as time allows. As a general rule, you can expect your direct question to be answered within 24 hours during week days. When sending an email, please include your full name so I know to whom I'm responding. Often, the email address does not indicate who is sending the message.

Final Project

Your final project will be 30% of your grade. Your project will include a GIS project that includes data collection, data entry, data analysis, and question and answer. You will also need to supply a 1-2 page paper describing the process and the project. More details will be available throughout the semester.

Help Desk

For technical problems like not being able to view a page, slowness issues, problems viewing video or hearing audio, things not working as they should, please contact the 24/7 eCollege helpdesk at (877) 740-2213, or email them by at ndscs.helpdesk@ndscs.edu They do not answer homework questions; send those to me.

Grading Policy

Grading and Evaluation

Evaluation for this course will be based on the following criteria:

1. Unit assignments 30%
2. Unit Quizzes 10%
3. Unit Discussion 10%

4. Midterm 10%
5. Final Project 30%
6. Final Exam 10%

Averaged percentages will convert to a letter grade APPROXIMATELY following the scale shown below:

- 90 – 100 = A
- 80 – 89 = B
- 70 - 79 = C
- 60 - 69 = D
- 0 - 59 = F

Discussion Grading Criteria

You are expected to respond to discussion questions and to two of your classmates threads. Each posting must be relevant and substantive (at least 75 words in length.) Responses to classmates must also be relevant and substantive (more than "I agree.") Your first entry is expected by Wednesday 10:00pm each week. Check back into the Discussion to respond to your classmates by Sunday 10:00 pm. You will be graded on participation according to the following: *Each week is worth 5 points* Point Breakdown

- A Maximum of 2 Points will be given for your initial Wednesday entry. This entry should be professional, respectful, and substantive. (75 words)
- A Maximum of 1 point will be given for each of your responses to classmates discussions. These responses should also be professional, respectful, and contribute to the discussion. (more than a single sentence)
- 1 point will also be given for completing the entire assignment and meeting all requirements above. Any late discussions will result in a 0 for that area as well as the loss of the final point.

Tie to Program Assessment Outcomes

The student will complete basic performance skills that this industry expects entry level civil engineering technicians to be able to do with minimal additional training.

Tutoring Service

NDSCS Distance Education Department has purchased an online tutoring service from SMARTHINKING for our online students. SMARTHINKING provides live, web-based tutoring in a variety of subjects. This service supplements our existing academic support services by offering real-time online tutoring and homework help for core courses and skills up to 24 hours a day, seven days a week. For more information contact your online class instructor or Distance Education.

Academic Integrity

Integrity is an NDSCS core value and there is an expectation that all students, as members of the college community, adhere to the highest levels of academic integrity. Dishonesty in class, laboratory, shop work or tests is regarded as a serious offense and is subject to disciplinary action by the instructor and dean of the respective division. For more information, refer to the

NDSCS Student Planner or [College Catalog](#) under [College Policies and Basic Regulations of Conduct](#).

Types of Misconduct

Cheating: Intentionally using or attempting to use unauthorized materials, information, or study aids in any academic exercise.

Fabrication: Intentionally and unauthorized falsification or invention of any information or citation in an academic exercise.

Facilitating academic dishonesty: Intentionally or knowingly helping or attempting to help another to commit an act of academic dishonesty.

Plagiarism: Intentionally or knowingly representing the words or ideas of another as one's own in any academic exercise.

Tuition/Fees

See tuition and fee information, Refund Policy and Withdrawal Schedule information in the NDSCS [Online site](#) under Financial Information. Tuition and fee costs do not include books, software, supplies and other program or course fees which may vary by program.

Disabilities and Special Needs

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and the Student Accessibility Coordinator, 215 Mildred Johnson Library (phone 701-671-2623, or toll-free 1-800-342-4325 ext. 3-2623) as early as possible in the term.