

CT 121: Plane Surveying (4 Credits)

Course Description

Instruction and practice in the use of surveying instruments and equipment. Types of surveys, units of measure, elementary leveling, transit problems, field notes and benchmarks are included. Survey transverse and triangulation calculations and adjustments including map plotting, latitudes and departures, open and closed traverses, error analysis, inverting between points, and intersection of lines are also covered. Equipment utilized will be automatic levels, transits and total stations.

Prerequisite Courses

None

Textbooks and Software and Other Materials

Required: Surveying, 8th Edition, Barry F. Kavanagh. (ISBN: 0-13-236512-X)

Supplies: Scanner and Adobe Acrobat Professional

Software: Microsoft Word is needed for all online classes. If additional software is needed for a particular course, it will be indicated in the online course schedule. The Civil Technology program also requires Microsoft Office 2003 or newer.

Contact Coleen at the NDSCS Bookstore for the most current textbook information (1-800-342-4325, ext. 2239 or coleen.thoe@ndscs.nodak.edu). You may also visit the Bookstore web site at <http://www.ndscsbooks.com/> and search for book information by class by clicking the "Textbook" tab.

Technology Required

Email: Students taking online classes from NDSCS also need a working email account. Be sure email address is updated in student record in PeopleSoft system.

Internet Access required. High speed Internet service is highly recommended. If students are unable to get high speed service, an alternate site may be needed to view some of the course components.

Course Objectives

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

- Perform traverse closure by the Compass Rule
- Perform traverse closure by the Transit Rule
- Calculate bearings from coordinates
- Calculate distance from coordinates
- Calculate section line distance from coordinates
- Determine midpoint of section line
- Compute bearings and distances between inaccessible points
- Compute area using coordinate method
- Compute area by average end method

- Compute area by trapezoidal technique
- Compute area by Simpson's one-third rule
- Compute area by triangles
- Compute bearing and distance of line to divide tract into two equal parts
- Determine area of irregular shaped parcels
- Calculate area of access strip
- Calculate area using a planimeter
- Create contour maps
- Create contour maps from field notes
- Compute volume by average end method
- Introduce to Digital Theodolite
- Introduce to EDM
- Introduce to Total Station
- Perform EDM Calibration
- Set transit on-line between 2 points
- Perform break-taping
- Layout building corners
- Layout building corner offsets
- Perform blue-topping
- Perform traversing
- Introduce data collectors

Assignments

Please follow the order of units as listed within the Course Navigation area (located at the left.) 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 will receive No Credit. A 15% deduction in the assignment grade may be given at the instructor's discretion. (student/instructor communication will have to take place)

No points will be assigned for incomplete assignments. Be prepared to spend at least twelve (12) hours per week in the online class, studying, and completing assignments.

No make-up exams will be issued to students not contacting the instructor prior to the scheduled exam time.

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 and print the Online Student Participation and Conduct Guidelines to learn of these expectations.

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 by telephone to make other arrangements.

Grading

This course will be evaluated by using weighted percents on the following categories: Labs, Homework, Tests and a Final Exam. Final grades will be as follows:

40%=Assigned Problems and Worksheets

20%=Assigned Labs

40%=Unit Tests and Final Test

Most worksheets will be graded by the following criteria:

- Complete, on time and correct = 100%
- Complete, on time but not correct = 50%

Redo worksheet and resubmit by due date "Correct" = +30%

Redo worksheet and resubmit by due date "Incorrect" = +0%

- * If you complete a worksheet incorrectly and resubmit with correct answers you'll receive an 80%.
- * If you complete a worksheet incorrectly and resubmit with incorrect answers, you'll receive a 50%.

You can only resubmit your incorrect assignment once.

It is to your advantage to redo all incorrect worksheets. You will not only gain from the better grade but you will also gain the knowledge of performing the problem correctly. Most assignments we do will build on the previous assignment. It is important to understand each assignment to be successful on the next one.

Grading Scale

Average percentages will be converted to a letter grade according to the following scale:

A=90-100%

B=80-89%

C=70-79%

D=60-69%

F=0-59%

No rounding will be used in determining the final grades. For Example: 89.9% = B

Discussion Grading Criteria

You are expected to respond to discussion questions and to two of your classmates as assigned. 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 each week. Check back into the Discussion to respond to your classmates by Saturday. You will be graded on participation according to the following:

Each week is worth 10 points:

Online- Threaded Discussion Participation			
Unsatisfactory 0 points	Needs Work 2 points	Satisfactory 3 points	Very Good 5 points
Less than 3 postings are made in the discussion board area.	3-5 entries: Each entry is posted but is brief (less than two sentences) a) It has little in the way of thoughtful, substantive ideas concerning the assignment and/or course content related to it. AND/OR b) It fails to respond to fellow student(s) or in response to a fellow student it is quite simple and just a personal remark not a substantive reply (ex- "Good. I really liked your comment.)	3-5 entries: Each entry has 3 or more sentences: a) Each contains thoughtful, substantive ideas concerning assignment and/or course content related to it; AND/OR b) The entries are responsive to at least two other classmates with detailed remarks about that individual's writing or discussion response.	3-5 entries: Each entry includes one or both characteristics in the 7 points box plus: a) Entries include an outside resource, or a relevant, specific real life application; AND/OR b) Your response to class member(s) clearly indicates your position in relation to what fellow students(s) said or wrote (e.g. - agreeing, disagreeing, adding to, modifying, extending or questioning it.)

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 will receive No Credit. A 15% deduction in the assignment grade may be given at the instructor's discretion. (student/instructor communication will have to take place)

No points will be assigned for incomplete assignments. Be prepared to spend at least twelve (12) hours per week in the online class, studying, and completing assignments.

No make-up exams will be issued to students not contacting the instructor prior to the scheduled exam time.

Work Expectations

Students should estimate approximately three hours of course work per credit per week for NDSCS classes. For example, a three-credit class may require approximately nine hours of work time a week for the student. This amount may vary by class and by student.

Classroom Conduct & Lab Preparation

Students will come to class/lab on-time and prepared for discussion. Students will maintain good personal hygiene and will be dressed appropriately for the activities they will be participating in. All students will be respectful of other student's ideas and opinions. Participation in class/lab activities is expected and required. Cell phones, pagers, CD players, MP3 players, text messaging and/or computer games will not be allowed during class/lab. No tobacco products of any kind will be allowed during class or in lab. Students showing obvious signs of intoxication will be asked to leave the class and will receive an unexcused absence of the day.

We will be performing many different labs while on campus. These labs are all performed outside. Please come prepared for all weather conditions. The only time we cancel lab time is for heavy rain or for high winds. If we lose a couple of hours for weather conditions, we will make it up in the evening.

Lab Schedule:

Dates: TBD

Start Time: 8am each day

End Time: End of the day and/or dark

Lunch: When convenient (normally 1 hour around noonish)

Dinner: When convenient

Items Needed:

Surveying Vest: (Same as CT-121, if you need a new one, let me know)

Shoes: Comfortable closed toed shoes. (No Sandals and you do not need steel toed shoes)

Boots or Overshoes: Grass can be wet in the morning or after a rain.

Suggested Items:

- Sunscreen
- Bug Spray
- Hat
- Clip on water bottle

- Gloves
- Jacket/Sweatshirt
- Rain Coat

Housing:

NDSCS Housing or 1.800.342.4325 ext. 32224
Wahpeton Motels

Policies and Procedures

NDSCS online students should be aware of various policies and procedures such as those shown below.

Attendance - Students are expected to log into their online classes frequently during each week of the semester and to submit course work on time to meet due dates set by the instructors. Attendance and class participation is monitored and students not submitting work in their online classes may be dropped from the class. Review the [Attendance Policy](#) for further details.

Computer Access - It is the student's responsibility to maintain access to a working computer and Internet connection to keep up in online class assignments. Because computer problems do occur, students should have a plan for alternative computer access in case of computer problems. Students will be able to access their online classes from any computer with an Internet connection. Review the [Computer Access Policy](#) for further details

Refund Policy/Withdrawal Refund Schedule

Academic Calendar - Online classes follow the same calendar as regular on-campus classes. They begin with the semester begins and students do not need to log in at specific days/times but instructors do set due dates for assignments and exams to be submitted so there is structure to the classes. Online classes are not self-paced but do provide flexibility in that they are accessible 24/7 to allow students to work around other commitments when doing their course work.

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.

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 Disability Support Services Office, 225 Mildred Johnson Library (phone 701-671-2623, 800-342-4325, ext. 32623) as early as possible in the term.

Other College Policies can be found in the [Catalog](#).

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.

Exams

Exams are done online. Instructors may require a proctor be present for online exams. When the semester begins, check your course information for the proctor form and proctor criteria.

Schedule

Online classes follow the same academic calendar for start and end dates as regular on-campus classes. While there is no set time for students to be logged into a class each day, instructors do set due dates for assignments and exams. Students should log into classes frequently to keep up with announcements and to keep up with course work. Online classes are not self-paced.

You may want to print the NDSCS Academic Calendar reference during the year. It includes semester start and end dates, final days to add/drop classes for each semester, vacation dates, etc.

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.