

**CM 1331 – Construction Surveying
Course Syllabus
Fall 2017**

Instructor: Gautam Raghavendra Eapi

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Section Information: CM1331- Secs: 001, 011

Lecture Meetings: Woolf Hall (WH) 210

Sec 001: Mon-Wed 8:00 pm – 8:50 pm

Lab Meetings: Nedderman Hall (NH) B05

Sec 011: Thurs 2:00 pm to 5:00 pm

Office Hours (NH B25 / NH239): Mon & Wed 10:00 am – 12:00 pm and 4:00 pm – 5:00 pm
or by Appointment

GTA/Instructor for lab: Akshay Parenky Email: akshay.parenky@mavs.uta.edu
Office Hours: NH B09

Course Content: General surveying principles and theories/fundamentals of physical measurements of spatial quantities, the use of surveying instruments: tape measurements, leveling, electronic distance measurement, total stations, traverse surveys, satellite positioning, introduction to geomatics, horizontal control surveys; construction applications: grade, highway curves, municipal street construction surveys.

Student Learning Outcomes:

- (a) an ability to apply knowledge of mathematics, science, and engineering (covered implicitly)
- (b) an ability to use the techniques, skills and modern engineering tools necessary for engineering practice (tested implicitly)

Requisites: Grade of C or better in PHYS 1443.

Reference Text Book: Barry F. Kavanagh and Dianne K. Slattery, Surveying with Construction Applications, 8th Edition, Pearson 2015

Supplementary reference Book: Charles D. Ghilani and Paul R. Wolf, Elementary Surveying: An Introduction to Geomatics, 14th Edition, Pearson, 2015

Policies: Normally, the class will be conducted in accordance with the policies given below. However, it is impossible to anticipate every possible circumstance. The instructor reserves the right to modify the given policies or to deviate from them in unforeseen or unusual circumstances. If there is a policy that you anticipate will affect you in a way that seems unfair, please bring it to the attention of the instructor before the end of the second week of class. After that, the reason for a student initiated change in policy must be compelling.

Attendance Policy: Regular and punctual attendance is expected of students enrolled in this class. Absences and tardiness may affect a student's grade. The student is responsible for determining what was covered during missed classes.

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period.

After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://wweb.uta.edu/aao/fao/>).

Assignments: Assignments will be given in lab sections. Unless a different specific due date is given in class or on the blackboard, lab assignments are due at the beginning of the following lab class.

Lab assignments are obtained and submitted electronically. Directions for obtaining and submitting the assignments are provided in a separate document. Obtaining an assignment in any other manner is considered academic misconduct and, when discovered, will be dealt with as such.

Major Assignments and Examinations: This class has no major assignments. There will be four lab examinations. The dates of the examinations are given below and on the class website. **There is always a small chance that a midterm examination will be rescheduled.** Notice of such a change will be provided as soon as possible.

	Sec 001
Exam 1 (20 %)	Oct 9 th , 2017
Exam 2 (20 %)	Nov 13 th , 2017
Final Exam (20 %)	Dec 13 th , 2017
Lab Exam (20%)	Nov 30 th , 2017

Make-up Examinations: Makeup lecture examinations are not given unless required by UTA policy. For university authorized absences, the student is required to follow the university policy as described at: http://wweb.uta.edu/catalog/content/general/academic_regulations.aspx#9. If an examination is missed as a result of an illness, the following policy applies. It is the responsibility of the student to provide acceptable, written documentation from a recognized medical professional stating that the health of the student or his classmates would have been jeopardized by the student's attendance at the examination. The documentation must be presented within one week of the student's return to class. For excused absences, unless a makeup examination is required by university policy, the score on the relevant portion of the final exam will be used to replace the first missed lecture exam. If arrangements are made well in advance, a lecture examination can usually be taken before the scheduled time and a more lenient excuse policy is applied.

Grading Policy:

	Weight	Average	Grade
Lecture Assignments (10 %)	10%	$90 \leq T \leq 100$	A
Lab Assignments (10 %)	10%	$80 \leq T < 90$	B
Exam 1	20%	$70 \leq T < 80$	C
Exam 2	20%	$60 \leq T < 70$	D
Final Exam	20%	$0 \leq T < 60$	F
Lab Exam	20%		
Total 100 %	100 %		

A numerical average and a letter grades will be computed for each of the components of the course using the data in the tables above.

Disability Accommodations: UT Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including *The Americans with Disabilities Act (ADA)*, *The Americans with Disabilities Amendments Act (ADAAA)*, and *Section 504 of the Rehabilitation Act*. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of disability. Students are responsible for providing the instructor with official notification in the form of a **letter certified** by the

Office for Students with Disabilities (OSD). Only those students who have officially documented a need for an accommodation will have their request honored. Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting:

The Office for Students with Disabilities, (OSD) www.uta.edu/disability or calling 817-272-3364. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability.

Counseling and Psychological Services, (CAPS) www.uta.edu/caps/ or calling 817-272-3671 is also available to all students to help increase their understanding of personal issues, address mental and behavioral health problems and make positive changes in their lives.

Non-Discrimination Policy: *The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit uta.edu/eos.*

Title IX Policy: The University of Texas at Arlington ("University") is committed to maintaining a learning and working environment that is free from discrimination based on sex in accordance with Title IX of the Higher Education Amendments of 1972 (Title IX), which prohibits discrimination on the basis of sex in educational programs or activities; Title VII of the Civil Rights Act of 1964 (Title VII), which prohibits sex discrimination in employment; and the Campus Sexual Violence Elimination Act (SaVE Act). Sexual misconduct is a form of sex discrimination and will not be tolerated. *For information regarding Title IX, visit www.uta.edu/titleIX or contact Ms. Jean Hood, Vice President and Title IX Coordinator at (817) 272-7091 or jmhood@uta.edu.*

Academic Integrity: Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

UT Arlington faculty members may employ the Honor Code in their courses by having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University. Additional information is available at <https://www.uta.edu/conduct/>.

Electronic Communication: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

Campus Carry: Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. Under the new law, openly carrying handguns is not allowed on college campuses. For more information, visit <http://www.uta.edu/news/info/campus-carry/>

Student Feedback Survey: At the end of each term, students enrolled in face-to-face and online classes categorized as “lecture,” “seminar,” or “laboratory” are directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student’s feedback via the SFS database is aggregated with that of other students enrolled in the course. Students’ anonymity will be protected to the extent that the law allows. UT Arlington’s effort to solicit, gather, tabulate, and publish student feedback is required by state law and aggregate results are posted online. Data from SFS is also used for faculty and program evaluations. For more information, visit <http://www.uta.edu/sfs>.

Final Review Week: for semester-long courses, a period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include [tutoring](#), [major-based learning centers](#), developmental education, [advising and mentoring](#), personal counseling, and [federally funded programs](#). For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at <http://www.uta.edu/universitycollege/resources/index.php>.

The IDEAS Center (2nd Floor of Central Library) offers **free** tutoring to all students with a focus on transfer students, sophomores, veterans and others undergoing a transition to UT Arlington. To schedule an appointment with a peer tutor or mentor email IDEAS@uta.edu or call (817) 272-6593.

The English Writing Center (411LIBR): The Writing Center Offers free tutoring in 20-, 40-, or 60-minute face-to-face and online sessions to all UTA students on any phase of their UTA coursework. Our hours are 9 am to 8 pm Mon.-Thurs., 9 am-3 pm Fri. and Noon-6 pm Sat. and Sun. Register and make appointments online at <http://uta.mywconline.com>. Classroom Visits, workshops, and specialized services for graduate students are also available. Please see www.uta.edu/owl for detailed information on all our programs and services.

The Library’s 2nd floor Academic Plaza offers students a central hub of support services, including IDEAS Center, University Advising Services, Transfer UTA and various college/school advising

hours. Services are available during the library's hours of operation. <http://library.uta.edu/academic-plaza>

Library Home Page library.uta.edu

Resources for Students

Academic Help

Academic Plaza Consultation Services library.uta.edu/academic-plaza

Ask Us ask.uta.edu/

Library Tutorials library.uta.edu/how-to

Subject and Course Research Guides libguides.uta.edu

Subject Librarians library.uta.edu/subject-librarians

Resources

A to Z List of Library Databases libguides.uta.edu/az.php

Course Reserves pulse.uta.edu/vwebv/enterCourseReserve.do

FabLab fablab.uta.edu/

Special Collections library.uta.edu/special-collections

Study Room Reservations openroom.uta.edu/

Emergency Phone Numbers: In case of an on-campus emergency, call the UT Arlington Police Department at **817-272-3003** (non-campus phone), **2-3003** (campus phone). You may also dial 911. Non-emergency number 817-272-3381

Course Schedule:**Lecture:**

Part 1 - Surveying Principles	
Chapter 1 Surveying Fundamentals	8/28/2017
Chapter 2 Surveying Mathematics	
Chapter 3 Tape Measurements	
Chapter 4 Leveling	-
Chapter 5 Electronic Distance Measurement	9/25/2017
Chapter 6 Introduction to Total Stations and Theodolites	9/27/2017
Chapter 7 Total Stations	
Chapter 8 Traverse Surveys and Computations	
Chapter 9 Satellite Positioning	-
Chapter 10 An introduction to Geomatics	11/6/2017
Part 2- Construction Applications	
Chapter 13 Highway Curves	11-8-2017
Chapter 15 Municipal Street Construction Surveys	-
	12-6-2017

Lab:

Lab	Report	Room
Lab 1 - Leveling loop	Field Book	NH B05
Lab 2 - Volume Calculation	Field Book	NH B05
Lab 3 - Determining Volume with Autocad Civil 3D		NH 235
Lab 3 - Determining Volume with Autocad Civil 3D	Autocad Map	NH 235
Lab 4 - Total Station Practice		NH B05
Lab 4 - Topographic Survey using TS	Field Book	NH B05
Lab 5 - Drawing Map using AUTOCAD Civil 3D		NH 235
Lab 5 - Drawing Map using AUTOCAD Civil 3D	Autocad Map	NH 235
Lab 6 - Determining Watershed	Autocad Map	NH 235
Total Station Practice		NH B05

As the instructor of the course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course – Gautam R. Eapi