

CpSc 2070

University's *Clemson Thinks*² community of courses

This section of the course is designed to improve critical thinking and problem solving skills.

We will use a definition of critical thinking skills proposed

by Diane Halpern that involves four strategies: **Plan**; **Work hard**; **Persist with complex thinking**; **Begin anew if you fail**.

"Two roads diverged in a wood, and I —
I took the one less traveled by,
and that has made all the difference."

Robert Frost

Specific Course Outcomes:

ANALYSIS

Use logical mathematical thinking..

1

MODELING

Models interpret discrete math problems.

2

VOCABULARY

Justify your approach and solutions using

3

PROOFS

Implement simple proof techniques.

4

COUNTING

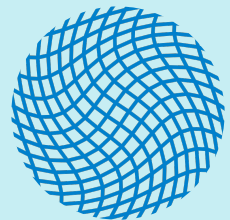
Apply suitable counting techniques.

5



Contact Info

Who, What,
When, Where



Course Specifics

Projects, Project
Grades, and Course
Grades



University Issues

Statements of
University Policies

CONTACT INFORMATION

CLASS: 232 MC ADAMS HALL T TH 8:00-9:15

Professor: Dr. Hedetniemi

Email: niemi@clemsun.edu

Office: 203 McAdams.

Office Hours: 7:30 - 7:45 T TH , 9:30 - 10:00 T TH
(others by appointment)

TA Hours still to be arranged



GUIDING STANDARDS FOR THIS DISCRETE STRUCTURES SECTION (THE ROAD LESS TAKEN):

(FROM THE COMMON CORE STATE STANDARDS WEBSITE FOR K-12, [HTTP://WWW.CORESTANDARDS.ORG/MATH/](http://www.corestandards.org/math/))

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct via arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning."

(FROM KEITH DEVLIN'S BLOG AT THE MATHEMATICAL ASSOCIATION OF AMERICA, [HTTPS://WWW.MATHVALUES.ORG/MASTERBLOG/WHAT-IS-A-MATHEMATICAL-PROOF](https://www.mathvalues.org/masterblog/what-is-a-mathematical-proof))

"Proofs are stories that convince suitable qualified others that a certain statement is true."

WHAT IS WORK ETHIC IN THIS CLASS?—IF NOT FOLLOWED 0 FOR THAT CLASS ACTIVITY



Arrive on time and keep working on **ONLY** this class the entire time!!



Think, listen and share your thoughts

Do not listen to music, take pictures of others work, or use your phone!!



COURSE SPECIFICS

PUNCTUAL CLASS ATTENDANCE IS ABSOLUTELY REQUIRED!! This course is based on active learning and a portion of each person's grade involves **GROUP** work during class. You will need to work on a laptop on which Adobe Illustrator is available. We will not be using a textbook. You should wait 15 minutes before assuming class will not be held.

Two class days (excluding the last class which is mandatory) can be missed without penalty. After two absences, the missed activity will be scored as a "0". Do not foolishly miss two days that may be "needed" in the future for an extended documented illness. This is not a lecture-based course. You will need to be engaged in this classwork the entire time to receive credit for being present. Sign-in sheet at beginning of class. Video and/or photo role will be taken at the end of the class as documentation of those present and engaged in work.

JOURNEY DOCUMENTATION (CLASSWORK DOCUMENTATION AND WORK-AT-HOME

DOCUMENTATION) will be submitted through **CANVAS on a regular basis** as a **PDF**. Late work will be **accepted for 24 hours at a penalty of highest grade being 3.0**. The submittal opportunity in Canvas will remain open during this time, so do not email. Plan your time appropriately to finish before deadlines. **CANVAS deadlines are the beginning of minute.**

JOURNEY DOCUMENTATION on daily activities will account for **85%** of the course grade, with the remaining percentage specified as **15%** dedicated to **FINAL EXAM**.

INTERPRETATION OF COURSE AVERAGE AS LETTER GRADE

A: All required work (unless excused absence) has been submitted and the calculated average	is at least 3.20
B: All required work (unless excused absence) has been submitted and the calculated average and no larger than 3.19	is at least 2.60
C: All required work (unless excused absence) has been submitted and the calculated average and no larger than 2.59	is at least 2.00
D: The calculated average but less than 2.0	is at least 1.80
F: The average	is less than 1.80

GRADE BREAKDOWN FOR JOURNEY DOCUMENTATION (EACH CLASS ACTIVITY)

BEGIN with a text document; type all information as if you are "writing a report". Into this report insert the storyboards you have exported from Adobe Illustrator. This should be a text document converted to a PDF, not an Adobe Illustrator document converted to a PDF.

You must provide a title that is the same as the class activity, the date of the activity, your first and last name, and the participants in your group (first and last names) in the typed document submitted as a PDF. Otherwise, your grade will be a 0 for that activity. You are to prove that you have learned something from each activity, using sentences and paragraphs and documented work as desktop snapshots (not cellphone snapshots) in your "stories".

25% ABILITY TO EXPLAIN PROBLEM IN OWN WORDS - THIS IS NOT TO BE SIMPLY REPEATING WHAT YOU ARE GIVEN IN ANY WAY: IT MUST BE BRIEF SENTENCES USING YOUR WORDS

50% both READABLE AND APPROPRIATE PRESENTATION OF RESULTS ACCUMULATED DURING WORK, MUST BE DISCOVERED IN GROUP AND AT HOME BY YOURSELF, WITH THE REPORT SEPARATING RESULTS DEPENDING ON WHERE FOUND - EVALUATED IN TERMS OF WORK ETHIC AND EVIDENCE OF WORK DONE BY YOURSELF AT HOME (NO "HOME" work on problem beyond stating results then the highest credit for this part will be 25%)

25% FOR ABILITY TO EXPLAIN RESULTS DISCOVERED AND SUGGEST NEW POSSIBILITIES - TO BE DONE BY YOURSELF AT HOME

RUBRICS FOR EACH JOURNEY ACTIVITY

Ability to explain problem:

- 0: Copied given problem statement
- 1: Copied given problem statement but added some additional explanation
- 2-4: Demonstrates understanding of problem statement by expressing accurately in own words

What you discovered in your group (and by yourself) on your activity journey

(Note: includes unsuccessful finds also):

- 0: Handwritten, messy or poorly organized or insufficient quantity
- 1: Typed but not organized or doesn't adhere at all to the problem or doesn't use vocabulary of problem or insufficient quantity
- 2-4: Typed, organized, uses vocabulary of problem, shows understanding of problem and what needs to be done, and shows quantity of work for time involved.

Conclusion you can make about your activity journey :

- 0: Simply repeats without adding understanding
- 1: Minimal understanding expressed
- 2-4: Interprets results with clarity, identifies future work.

UNIVERSITY ISSUES

Clemson University Disability Access Statement

Clemson University Title IX (sexual Harassment) Statement

Clemson University Academic Integrity Statement And Rules

Clemson University Disability Access Statement

“Clemson University values the diversity of our student body as a strength and a critical component of our dynamic community. Students with disabilities or temporary injuries/ conditions may require accommodations due to barriers in the structure of facilities, course design, technology used for curricular purposes, or other campus resources. Students who experience a barrier to full access to this class should let the professor know, and make an appointment to meet with a staff member in Student Accessibility Services as soon as possible. You can make an appointment by calling 864-656-6848, by emailing studentaccess@lists.clemson.edu, or by visiting Suite 239 in the Academic Success Center building. Appointments are strongly encouraged – drop-ins will be seen if at all possible, but there could be a significant wait due to scheduled appointments. Students who receive Academic Access Letters are strongly encouraged to request, obtain and present these to their professors” **during the first week of class** “so that accommodations can be made in a timely manner. It is the student’s responsibility to follow this process each semester. You can access further information here: <http://www.clemson.edu/campus-life/campus-services/sds/>. “

Clemson University Title IX (sexual Harassment) Statement

“University is committed to a policy of equal opportunity for all persons and does not discriminate on the basis of race, color, religion, sex, sexual orientation, gender, pregnancy, national origin, age, disability, veteran’s status, genetic information or protected activity in employment, educational programs and activities, admissions and financial aid. This includes a prohibition against sexual harassment and sexual violence as mandated by Title IX of the Education Amendments of 1972. This policy is located at <http://www.clemson.edu/campus-life/campus-services/access/title-ix/>. Mr. Jerry Knighton is the Clemson University Title IX

THINKING ABOUT THE INTEGRITY STATEMENT

Plagiarism will absolutely not be tolerated! Taking information from any source without acknowledgement is dishonest. Just because information appears online, it is not your's for the taking without giving credit to the person who created the information. If you work with someone else - **by giving information or taking information**, you must acknowledge this sharing of work. If you search for the “answer” and do not acknowledge what you find, you will be considered to have plagiarized. All acknowledgements must appear immediately following the information that is not yours. If it is an exact quote, it must be in quotes. Paraphrasing does not exclude acknowledgements.

Coordinator. He also is the Director of Access and Equity. His office is located at 110

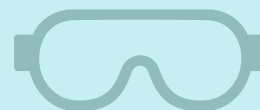
FINAL THOUGHTS

Think of this class as a trek – not a destination!

Report what your group conceives with their minds and what you discover from your ingenuity not what you discover from the internet,

See math through the wonderment of a child.

But most importantly – **HAVE FUN!!**



Holtendorff Hall, 864.656.3184 (voice) or 864.656.0899 (TDD).

Clemson University Academic Integrity Statement And Rules

“As members of the Clemson University community, we have inherited Thomas Green Clemson’s vision of this institution as a “high seminary of learning.” Fundamental to this vision is a mutual commitment to truthfulness, honor, and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form.”

