CSCE 222: Discrete Structures for Computing
Section 503
Fall 2016

Philip Ritchey

Last Modified August 29, 2016

1 Class Time and Location

Lecture: TR 3:55pm – 5:10pm in ETB 2005

2 Course Description and Prerequisites

CSCE 222. Discrete Structures for Computing. (3-0). Credit 3.
This course provides the mathematical foundations from discrete mathematics for analyzing computer algorithms, for both correctness and performance; introduction to models of computation, including finite state machines and Turing machines.
Prerequisite: MATH 151. Cross-listed with ECEN 222.

3 Learning Outcomes

At the end of the course, students will understand the basic principles of logic, proofs and sets. They will be able to apply results from discrete mathematics to the analysis of algorithms. They will be able to produce proofs by induction and apply counting techniques. They will have a basic understanding of models of computation.

4 Instructor Information

Instructor

Philip Ritchey AGGIE ALLY QPR [1]
Office: 326 HRBB
Office Phone: 979-458-1059
Google Voice: 979-476-2619 (forwards to my cell phone)
Email: pcr@tamu.edu
Office hours: M 8:30am – 9:30am, W 9:30am – 10:30am, and by appointment.

[1] I am willing to provide a safe haven, a listening ear, and support for lesbian, gay, bisexual, and transgender people or anyone dealing with sexual orientation issues. I am a QPR gatekeeper for suicide prevention. I support violence prevention efforts across campus.

Teaching Assistants

Andrew Nemec
Office: 509A HRBB
Email: nemeca@tamu.edu
Office hours: MW 11am – 1pm, TR 1:30pm – 3:30pm, F 10am – 11am, M 5:45pm – 6:45pm, and by appointment.

Pulakesh Upadhyaya
Office: 526 HRBB
Email: pulakesh@tamu.edu
Office hours: MWF 9am – 11am, TR 10am – 11am, 5:30pm – 6:30pm, and by appointment.

Peer Teachers

Peer-Teachers are available to help you with this class. For more details, see `engineering.tamu.edu/cse/academics/peer-teachers/current-peer-teachers` and the course website.

5 Textbook

Required
Kenneth Rosen, Discrete Mathematics and Its Applications, 7th ed., McGraw-Hill, 2012.

6 Course Website

`faculty.cse.tamu.edu/ritchey/courses/csce222/fall16`

7 Grading

Weight	Component	Date
48%	Homework	Every Week
14%	Quizzes/Participation/Attendance	Every Week
6%	Exam 1	20 September
9%	Exam 2	13 October
12%	Exam 3	8 November
21%	Final Exam	13 December, 1:00pm - 3:00pm

Final letter grades will be assigned according to the following cutoffs:

90+:	A
80:	B
70:	C
60:	D
less than 60:	F

N.B. It is not an accident that the rubric adds to 110%. The final letter grade cutoffs are not percentages, but rather raw scores out of the total 110 points possible in the course.

8 Tentative Schedule of Topics

Day	Topic	Reading
8/30	Course Introduction, Algorithms	Chapter 3.1
9/1	Algorithms	Chapter 3.2
9/6	Algorithms	Chapter 3.3
9/8	The Foundations: Logic and Proofs	Chapter 1.1–1.3
9/13	The Foundations: Logic and Proofs	Chapter 1.4–1.5
9/15	The Foundations: Logic and Proofs	Chapter 1.6–1.8
9/20	**Exam 1**	Cumulative
9/22	Basic Structures: Sets, Functions, Sequences, Sums, and Matrices	Chapter 2.1, 2.2
9/27	Basic Structures: Sets, Functions, Sequences, Sums, and Matrices	Chapter 2.3
9/29	Basic Structures: Sets, Functions, Sequences, Sums, and Matrices	Chapter 2.4
10/4	Modeling Computation	Chapter 13.1
10/6	Modeling Computation	Chapter 13.2, 13.3
10/11	Modeling Computation	Chapter 13.4, 13.5
10/13	**Exam 2**	Cumulative
10/18	Relations	Chapter 9.1, 9.2
10/20	Relations	Chapter 9.5, 9.6
10/25	Induction and Recursion	Chapter 5.1
10/27	Induction and Recursion	Chapter 5.1, 5.2
11/1	Induction and Recursion	Chapter 5.3, 5.4
11/3	Induction and Recursion	Chapter 5.5
11/8	**Exam 3**	Cumulative
11/10	Counting	Chapter 6.1–6.3
11/15	Counting	Chapter 6.3–6.5
11/17	Advanced Counting Techniques	Chapter 8.1–8.3
11/22	Advanced Counting Techniques	Chapter 8.3–8.5
11/24	No Class	SMBC #2425
11/29	Number Theory and Cryptography	Chapter 4.1–4.2
12/1	Number Theory and Cryptography	Chapter 4.3–4.5
12/6	Number Theory and Cryptography	Chapter 4.6
12/13	**Final Exam**	Comprehensive

9 Tentative Homework Due Dates

Homework is due Sundays before 11:59 p.m. (CST).

HW	Due Date	HW	Due Date
1	4 September	8	23 October
2	11 September	9	30 October
3	18 September	10	6 November
4	25 September	11	13 November
5	2 October	12	20 November
6	9 October	13	27 November
7	16 October	14	4 December

10 Policies

10.1 Attendance

You are strongly encouraged to attend every class, arrive on time, and stay the whole time. You are responsible for learning the material covered in class regardless of your attendance.

10.2 Typesetting

All homework must be typed. You are strongly encouraged to typeset your work using LaTeX. Resources for LaTeX can be found on the course website and on the Internet. Microsoft Word and OpenOffice Write are acceptable, yet vastly inferior, alternatives.

10.3 Late and Missed Work

Homework submitted on or before the due date (*on time*) will be graded and receive feedback from the grader. Homework submitted after the due date and before 20 November 2016 (*late*) will be graded but will not receive feedback from the grader and is not eligible for regrading. Homework submitted after the due date and after 20 November 2016 (*unacceptably late*) will not be graded. Exams and other in-class work can be made up in the event of a documented University Excused Absence. See rule 07 of the student rules: `student-rules.tamu.edu/rule07`.

10.4 Version Control

You are strongly encouraged to use a version control system to track changes and back up your work. Texas A&M has an institutional GitHub account (`github.tamu.edu`) that you can use. Aside from Git, other free options for version control include SVN, CVS, Mercurial, and Perforce.

10.5 Collaboration

You are explicitly prohibited from collaborating on homeworks. Collaborating means copying the work of another and submitting it as your own (*plagiarism*), or allowing another to copy your work and submit it as their own (*complicity*). In either case, the minimum penalty is a zero (0) on the assignment and the violation reported to the Aggie Honor System Office.

You may discuss homeworks on a conceptual level only. You are encouraged to work with others to understand the concepts required for the homework. However, you must take care that your discussions do not cross the line into collaboration. One way you can protect yourself and others is to not work on the homework with others. When discussing the homework with others, put it away and focus on understanding the concepts rather than seeking answers for a specific problem. You may work together to solve problems that are not assigned as homework, but all the work you submit on the homework must be your own. Another method is to not work on homework when solutions are in front of you. If you have the solution to a problem which you cannot solve on your own, put it away before returning to your own work. If you get stuck and have to go back to the solution, put your work away before looking at the solution.

Go to office hours. For any and all help on the homework, you are strongly encouraged to attend my office hours or a TA's office hours. We are ready, willing, and able to help you understand the material.

10.6 Regrading

We work very hard to ensure that work submitted on time is graded correctly and completely. If you believe that work submitted on time has been graded incorrectly or incompletely, you must **meet with a TA within one week of the date the work is returned**. Only if you can prove to the TA that your solution is correct and complete will your work be regraded.

10.7 Return of Graded Work

You may pick up your graded work from the instructor during office hours. We will make an effort to complete the grading of work submitted on time within one week of the due date.

10.8 Solutions

Quiz solutions will be worked out in class immediately after the quiz.
Homework and exam solutions will be available for review during the instructor's office hours.
No, you cannot copy them. See my advice under Collaboration.

10.9 Extra Credit

There are 10 points of extra credit built into the grading rubric. This is the only extra credit that is available in the course.

10.10 Curving

This class is not curved.

10.11 eCampus

All homeworks must be submitted as PDFs to eCampus (`ecampus.tamu.edu`). You may submit an unlimited number of times. Only the most recent submission will be graded. Grades for homeworks, quizzes, and exams will be posted on eCampus.

10.12 Piazza

All questions and comments about the course should be posted on Piazza (`piazza.com`). Piazza is designed and managed so that you can get help quickly and efficiently from classmates, the PTs, the graders, the TAs, and me. If you email a question or comment about the course to me or a TA, you will very likely be redirected to Piazza. You may post questions or comments to the instructors on Piazza privately, however this privilege will be revoked if it is misused.

10.13 Email Formatting

When you send email to me or a TA, the subject must be prefixed with [CSCE 222] and you must sign your name to the email. Putting [CSCE 222] in the subject will let us know in which course of ours you are enrolled. Signing your name will let us know who you are. If you do not sign your name, we may assign you one at random in our reply.

10.14 Discussion of Grades

Federal law prohibits the instructor, TAs, and graders from discussing grades over email or phone. If you have a question about your grade, you must discuss it with us in-person, such as during office hours.

10.15 Americans with Disabilities Act (ADA) Policy Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit `disability.tamu.edu`.

10.16 Harassment and Discrimination

Texas A&M is committed to the fundamental principles of academic freedom, equality of opportunity and human dignity. To fulfill its multiple missions as an institution of higher learning, Texas A&M encourages a climate that values and nurtures collegiality, diversity, pluralism and the uniqueness of the individual within our state, nation and world. All decisions and actions involving students and employees should be based on applicable law and individual merit.

Texas A&M University prohibits harassment and discrimination against any member of the University community on the basis of race, religion, color, sex, age, national origin or ancestry, genetic information, marital status, parental status, sexual orientation, gender identity and expression, disability, or status as a veteran.

Students who believe they have experienced harassment or discrimination prohibited by this statement are encouraged to contact the Office of the Dean of Student Life at 979-845-3113.

10.17 Academic Integrity Statement and Policy – Aggie Code of Honor

An Aggie does not lie, cheat, or steal, or tolerate those who do.

For all academic work in this and every course, it is expected of you that you shall neither give nor receive any unauthorized aid.

All violations of the Aggie code of Honor will be reported to the Aggie Honor System Office.

For more information, see `aggiehonor.tamu.edu/RulesAndProcedures/`.