

CS-303 Discrete Structures And Computing Theory

Fall 2021 - Syllabus and Information

Contact Your Instructor

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Office: Root Hall (RO), A-180

Course Website: <http://cs.indstate.edu/~sternfl/303F/s2.html>

CS Server Instructor/Class Directories

cs.indstate.edu: */u1/h0/sternfl/303F*

Lecture

Class Section 001:

Class Section 301:

MW 1-1:50 Root Hall R0 A017 and on Zoom

TR 12:30-1:20 R0 A017 and on Zoom

Final Exam:

Dec 8 1:00pm

Instructor Office Hours (RO A-180):

TWR 10:00--10:50 and by appointment. Zoom meetings are possible. Send me an email.

Computer Resources:

CS Unix Lab:

Root Hall (RO), A-015 (basement, just west of west stairwell, first door on the left).

Graduate Assistant Tutoring:

See <http://cs.indstate.edu/info/labs.html>

Prerequisites:

C or better in CS 201

Recommended Texts

recommended text: Discrete Structures, Logic, and Computability, 4th Edition by James L. Hein

*recommended text: Discrete Mathematics and its Applications with Combinatorics and Graph Theory, 7th Edition
by Kenneth H. Rosen*

Course Website

The majority of this course will be run through the course website linked at the top of this document. Bookmark this page. The course website contains announcements, a schedule of due dates, course assignments, lecture materials, and even links to exams and projects. You should check this site daily if possible, but twice a week at minimum to ensure that you do not miss an assignment.

Course Announcements

Announcements regarding the course will be posted under the *Announcements* section of the course website. Announcements may also be made during class (if applicable), or via your ISU sycamores email account. You should regularly check your email account or have it forwarded to an account that you check regularly. The *Announcements* section of the course website should be the most comprehensive list of any and all course activity, so check it regularly.

Classroom Conduct

You may not use cell phones, iPods/music players, etc. during class unless otherwise stated. If I can hear your headphones that means you are being disruptive, and if I have to ask you to turn down a device more than once, you may be asked to leave that day's lecture. You should be civil and respectful to both the instructor and your classmates, and you should arrive to class a few minutes before the scheduled lecture so you are ready for lecture to begin on time. You may use your computer during class if you are using it to follow along with the examples that are being discussed. You may not check social media or work on other courses, etc. during class. Do not consume or share any inappropriate material at any time. Be professional so that you may become a professional.

Ethics

The intentional or malicious use of systems, software, or application settings, to undermine another student's educational experience will not be tolerated and may warrant extreme academic consequences on par with plagiarism. Malicious tampering with user accounts, settings, or systems of students, instructors, or any other group or individual will be penalized similarly.

Course Information

Course Number: CS-303

Course Name: Discrete Structures and Computing Theory

Course CRNs:

Section 001: 53310

Section 301: 53422

Credit Hours: 4.0

Course Catalog Description:

Mathematics content that is foundational to and useful for computer science. Topics include axioms and proofs, induction, graph theory, probability, finite automata, regular expressions, Turing machines, and the Church-Turing thesis.

Course Outline

Agreed upon facts and reasoning from them
Dealing with an axiomatic system
Runtimes
Mathematical Induction
Probability, expected value
Graph Theory
Models of Computation

Learning Outcomes

Be able to write and follow proofs.
Be able to construct induction proofs.
Be able to compute runtimes
Be able to use graph algorithms

Expected Amount of Work

If you take this class seriously and get what you should out of it, some weeks you will likely be spending around **3-6 hours/week** or more on the class work (outside of lecture time). The students who get A's in their CS courses and have an easy time finding jobs do spend this much time on this course. Not everyone would need to spend this much time and not all weeks will be the same, but you should plan on putting in whatever time it takes.

Note - your classes should be more important than your part-time job.

Course Work

Your grade will be determined by how well you do your coursework. There are four types of class work.

Class participation. I will keep track of your answers to my questions. Each student should participate at least once a week. A good bit of class

participation will be virtual using Teams software that you can download from portal.office.com.

Reading. Before class you will use a browser to read assigned Web pages. No points, but what you learn will help you with class participation, with quizzes and tests and homework.

Homework. You will log onto the cs server, cs.indstate.edu, and work on your assignments by writing files.

Quizzes, Tests, Final Exam.

Item	Percent
class participation	10%
homework	10%
quizzes (combined)	10%
Test 1	20%
Test 2	20%
Final	30%

There will be about one quiz a week. No quiz in a week with a test. There will be 2 tests during the semester. A quiz lasts about 10 minutes. A test will last 50 minutes.

CS Course Policies

Note that this course follows all standard CS course policies. In particular check the CS course policies related to - cheating/plagiarism, attendance, missing exams. See <http://cs.indstate.edu/info/policies.html> for details.

Late Work

Late homeworks and labs will not be allowed to be turned in for credit, mainly because they will be used as a learning tool, and the answers will be given out shortly after the assignments are collected. If you do miss an assignment, I highly recommend you still attempt to complete it on your own because the material builds on itself. The assignment with the lowest percent value will be dropped from the grade calculation. If we have more than 15 total assignments then the 2 lowest scores will be dropped. Dropping an assignment grade

allows you some leeway in case you have an emergency and cannot complete an assignment. Do not waste it. Showing effort on the assignments can often help you when I grade, so do not just skip them if you are confused. Contact me via email or chat if you need help. **If you begin to struggle or fall behind, contact me as soon as possible. Do not wait until the end of the semester; that will be far too late!**

Start Homeworks Early

We suggest attempting a homework assignment the day it is given, or the day after, so that if you have a problem you can ask early. If you continue to have problems in trying to complete the assignment, you will have time to ask again. Many of the homework assignments require thought and problem solving, which takes “time on the calendar” not just “time on the clock”. By that we mean that spending two hours on 3 consecutive days may be more productive than trying to spend 6 hours at once on the assignment.

Blackboard

The course has a blackboard site. Click [here](#) to go to blackboard. You should see this course listed under your courses for the current term. The blackboard site is only used for giving you your grades (go to the course in blackboard, then click “My Tools”, and then “My Grades”). All course content, schedule, etc. is kept in this google doc (which you are currently viewing).

Academic Integrity

Follow the standard CS course policies in terms of what is and is not allowed on assignments: <http://cs.indstate.edu/info/policies.html>

Please ask the instructor if you have doubts about what is considered cheating in this course.

Special Needs / Student Disabilities

Standard language included in the syllabi for ISU courses.

Indiana State University recognizes that students with disabilities may have special needs that must be met to give them equal access to college programs and facilities. If you need course adaptations or accommodations because of a disability, please contact us as soon as possible in a confidential setting either after class or in my office. All conversations regarding your disability will be kept in strict confidence. Indiana State University's Student Support Services (SSS) office coordinates services for students with disabilities: documentation of a disability needs to be on file in that office before any accommodations can be provided. Student Support Services is located on the lower level of Normal Hall in the [Center for Student Success](#) and can be contacted at 812-237-2700, or you can visit the ISU website under A-Z, [Disability Student Services](#) and submit a Contact Form. Appointments to discuss accommodations with SSS staff members are encouraged.

Once a faculty member is notified by Student Support Services that a student is qualified to receive academic accommodations, a faculty member is obligated to provide or allow a reasonable classroom accommodation under ADA.

Disclosures Regarding Sexual Misconduct

Standard language included in the syllabi for ISU courses.

Indiana State University fosters a campus free of sexual misconduct including sexual harassment, sexual violence, intimate partner violence, and stalking and/or any form of sex or gender discrimination. If you

disclose a potential violation of the sexual misconduct policy I will need to notify the Title IX Coordinator. Students who have experienced sexual misconduct are encouraged to contact confidential resources listed below. To make a report or the Title IX Coordinator, visit the Equal Opportunity and Title IX website: <http://www.indstate.edu/equalopportunity-titleix/titleix>.

The ISU Student Counseling Center – HMSU 7th Floor | 812-237-3939 | www.indstate.edu/cns

The ISU Victim Advocate – Trista Gibbons, trista.gibbons@indstate.edu

HMSU 7th Floor | 812-237-3939 (office) | 812-230-3803 (cell)

Campus Ministries - United Campus Ministries | 812-232-0186

<http://www2.indstate.edu/sao/campusministries.htm>

www.unitedcampusministries.org | ucmminister2@gmail.com

321 N 7th St., Terre Haute, IN 47807

For more information on your rights and available resources

<http://www.indstate.edu/equalopportunity-titleix/titleix>