

CSCI 1900 - Math for Computer Science

Fall 2026 Section 001 Syllabus

Instructor(s)	Course details	Required Material	Schedule	Grading	Expectations	Other Policies
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NOTE: Updates to this syllabus will be made as changes occur in University or Department policies, student needs, instructor needs, or available content.

- Version 01: 07/06/2026 - Initial syllabus release.

Instructor for Section 001:

Instructor: **David Tarnoff**

Office: James and Nellie Brinkley Center, room 154 (Building 904b on [ETSU Main Campus Map](#))

Office Hours: Mondays and Wednesdays from 9:15 a.m. to 11:15 a.m.
Tuesdays and Thursdays from 10:15 a.m. to 11:15 a.m.
or by appointment
[Click here for latest schedule](#)

Phone: 423.439.6404 (Office/voice mail)

e-mail: tarnoff@etsu.edu*

Web page: This course uses [ETSU's D2L server](#) for online content.

** All attempts will be made to answer emails within one to two business days after receipt. Email is not monitored between the hours of 6:00 PM and 8:00 AM nor is it monitored on weekends.*

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Course Details:

Course Number: CSCI 1900

Course Title: Math for Computer Science

Meeting Time(s):

- Section 001: Tuesdays and Thursdays from 8:35 a.m. to 9:55 a.m. in Brinkley Center 137B

Catalog Description: Provides a working knowledge of set theory, mathematical induction and recursion, relations and digraphs, functions, trees and languages, finite-state machines, and languages and how these topics are applied to the practice of computer science. Students who are required to take learning support math must successfully complete it before taking this course.

Prerequisites:: MATH 1530, MATH 1720, or MATH 1910 with a grade of C- or higher.

Corequisites: CSCI 1250

Credit: 3 credit hours

Learning Outcomes: The course is meant to instruct students on the mathematical principles used in computer applications. With this background, we expect students completing this course to be able to:

- understand examples and perform operations on sets, functions, relations; (Shared Outcome 4a)
- apply propositional and predicate logic, and matrices using the appropriate terminology; (Shared Outcome 4a)
- effectively use formal logic proofs and logical reasoning to solve problems; (Shared Outcome 4a)
- model problems in computer science using graphs and trees; and (Shared Outcome 4a, Computer Science Outcome 1)
- relate and apply these concepts to practical applications. (Shared Outcome 2b, Shared Outcome 4a, Computer Science Outcome 1)

Enabling D2L Alerts: Most of the material required for this course will be provided through the D2L learning management system. It can be difficult to keep up with deadlines for assignments, quizzes, and/or tests. Every effort will be made by the instructor to use the D2L news tool and D2L calendar, however, it is the responsibility of the student to keep up with due dates. **Please consider configuring D2L to notify you of course events via email, text message, or both.** Note that this does not replace the need for regular logins to D2L to monitor the calendar, assignments, and content.

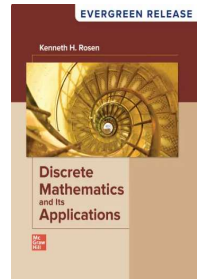
To turn this option on, log into D2L, click on your profile in the upper right corner of the window, select "Notifications", and select the events for which you want to be notified. Additionally, you can register your mobile device to receive notifications there. It is important to note the options you select here are global for D2L and will affect all of your courses not included in the course exclusions at the bottom of the notifications screen.

The CSCI 1900 D2L course site will be organized so that each date/lesson is a module containing sub-modules for reading, video, and/or assessments/quizzes. The readings or videos should be reviewed before coming to the scheduled class while the assessments/quizzes are to be completed by the assigned due date after the material is presented. The content in the reading and video sections overlaps, and the student is encouraged to use the media with which they are most comfortable. That said, there are a couple of topics that might not be covered as completely with one or more of the available media. There will be a note in the modules indicating when this is the case.

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Required Materials:

The textbook for this course (available through the ETSU bookstore) is *Discrete Mathematics and its Applications*, Eighth Edition, by Kenneth H. Rosen, ISBN: 978-1-259-67651-2. McGraw-Hill offers four purchase options: 180 day eBook rental, lifetime eBook rental, physical textbook rental, or loose-leaf purchase. Information regarding each of these purchase options can be found at <https://www.mheducation.com/highered/product/discrete-mathematics-applications-rosen/M9781259676512.html>.



Although not required, there are a number of resources available online including <https://discrete.openmathbooks.org/dmoi3/>

Students can also find more computer science research materials at Sherrod Library's Research Guide for Computer & Information Sciences.

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Course outline:

The course outline is presented below. The instructor has the right to alter the outline at any time due to time constraints, unexpected scheduling conflicts, or overall benefit to class effectiveness. Unless otherwise indicated, the reading is to come from the Rosen text.

Day	Date	Lesson Topic	Reading
1	25-Aug	Sets and Subsets	2.1
2	27-Aug	Operations on Sets	2.2
3	1-Sep	Functions	2.3
4	3-Sep	Sequences	2.4
5	8-Sep	Algorithms	3.1
6	10-Sep	Functions in CS/ Complexity of Functions	2.2, 3.2, Appendix 2
7	15-Sep	Matrices	2.6
8	17-Sep	Review for Test 1	N/A
9	22-Sep	Test 1	N/A
10	24-Sep	Intro to Relations	9.1, 9.2, 9.3
11	29-Sep	Properties of Relations including Equivalence	9.1, 9.5
12	1-Oct	Logical Operations	1.1
13	6-Oct	Conditional Statements	1.2, 1.3, 1.4
14	8-Oct	Methods of Proof	1.6, 1.7, 1.8
-	13-Oct	ETSU Fall Break - No Class	N/A
15	15-Oct	Mathematical Induction	5.1
16	20-Oct	Mathematical Induction	5.1
17	22-Oct	Properties of Integers	4.2, 4.3
18	27-Oct	Review for Test 2	N/A
19	29-Oct	Test 2	N/A
20	3-Nov	Permutations/Combinations	6.3

21	5-Nov	Permutations/Combinations	6.3
22	10-Nov	Trees/Graphs	10.1, 10.2, 11.1, 11.2
23	12-Nov	Labeled Trees/ Huffman Code/ Order	11.3
24	17-Nov	Minimal Spanning Trees	11.4, 11.5
25	19-Nov	Regular Expressions	13.4
-	24-Nov	Thanksgiving Holiday - No Class	N/A
26	26-Nov	Finite State Machines	13.2, 13.3
27	1-Dec	Non-Deterministic versus Deterministic Finite Automata	TBD
28	3-Dec	Review for Test 3	N/A
29	8-Dec	Test 3: 1:20 p.m. to 3:20 p.m.	N/A

Final Exam Time:

The following time slots have been assigned by the University for the final exams for our sections of CSCI 1900. You can verify these times with the [University's Final Exam Schedule](#)

- Section 001**: Tuesday, December 8, from 1:20 p.m. to 3:20 p.m.

** - Note that section 001 is the section that regularly meets from 8:35 a.m. to 9:55 a.m. on Tuesday and Thursday.

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Grading Policy:

The following is a description of the assessments to be used to calculate a student's final grade in this course.

Math Assessment Pre-Test: The first online quiz to be made available this semester is a math assessment pre-test. This quiz has two purposes. First, you might be anxious thinking that a course titled, "Math for Computer Science," will require mathematical skills beyond your current capabilities. If you are comfortable with basic operations in algebra, you will be able to master the topics presented in this course. This quiz contains eight questions covering some of the skills you will be using so that you won't be surprised by the math.

Second, if you are a little rusty with algebra, this quiz offers guidance for how to brush up on the material. Associated with each of the eight questions is a suggested short video resource you can watch to become more comfortable with that skill. Retake the quiz as many times as you need to get a perfect score.

Note that this quiz serves as a gatekeeper to the majority of the course assessments. You must score a 100% on the quiz before you can take assessments beyond the fourth lesson titled, "Sequences."

The grade you receive for this quiz (which will be 100%) will be included with the scores for the other timed D2L quizzes.

Timed Required Quizzes: One required online quiz will be given each week throughout the semester. These quizzes will be conducted via D2L and contain questions comparable to questions found on the written test. Below are some of the details regarding the quizzes.***

- **Each quiz will be open at the completion of Thursday classes.**
- **Each quiz will be due at 11:59 PM on the following Monday.**
- **Each quiz will have an enforced time limit of four hours.**
- **Each quiz will have the number of attempts set to one.**
- **There will be no provisions for missed or late work.**
- **Without exception, all quizzes are to be done on an individual basis.**

It is understood that circumstances could arise that make it difficult to complete an assessment to the best of the student's ability. It is for this reason that the lowest quiz grade will be dropped when computing final grades. Also, note that the majority of the assignments will require additional grading after submission to D2L. Please do not email the instructor regarding grading questions until after the answers have been posted.

*** - There is one exception to the above. The first week quiz will also have a syllabus quiz. This quiz will not have a time limit nor a limit on the number of attempts.

Written Tests: There will be three tests given during the semester, each graded on a 100-point scale and carrying equal weight toward the calculation of the student's final grade. The tests will consist of a number of short and long answer questions. Additional details regarding each exam will be provided during the scheduled review days. The exams may include any material covered in lectures, assigned readings, or exercises even if the material was not covered directly in lecture.

The first two exams will take place during a scheduled class period while the third test will be held during the assigned final exam time for the class. All three exams will be in-class and timed.

Assessment Weighting: The table below shows the weights carried by each assignment toward calculating a student's final grade.

Assignment	Portion of final grade
Quizzes	16 %
Test 1	28 %
Test 2	28 %
Test 3	28 %
Total	100 %

The table below presents the translation between a student's total score and their final grade.

Percent cutoff (Minimum score to receive grade)	Grade
93	A
90	A-
87	B+
83	B
80	B-
77	C+
73	C
70	C-
67	D+
60	D
0 to less than 60	F

Attendance policy: Attendance and participation are important; students with poor attendance generally do poorly. Missing material from one class makes it difficult to understand new material and, once behind, it is difficult to catch up. Students are encouraged to ask appropriate questions and to participate in class discussions and activities. Students may learn as much from one another as from the instructor. If anyone is confused about some point, chances are that others are also confused and will appreciate that someone has asked for clarification.

Posting of grades: As soon as grades are available, they will be posted to the grades section of the course's [D2L site](#). Due to the unsecure nature of email, this is the only method outside of work returned directly to the student where grades will be discussed or posted.

Note that the majority of the assignments are either hand graded or require validation of scoring after online submission. Please do not email grading questions to the instructor until after the answers have been posted.

Make-up Work: Make-up assignments are only available for in-class assignments missed due to university-approved absences. ***Due to their vast flexibility, no extensions or make-ups are available for online assignments.*** As for the in-class assignments, the [University's provost office specifies that the only recognized excuses for absence are the following](#), all of which require appropriate documentation:

- Absences Due to Participation in University-Sponsored Events
- Absences Due to Military Service
- Absences Due to Religious Observance
- Absences Due to Death of an Immediate Family Member
- Absences Due to Hospitalizations
- Absences Due to Childbirth or Adoption
- Absences Due to Imposed Court Appearance
- Absences Due to Illness
- Absences Due to Disability Registered with the Office of Disabilities Services

The student must present suitable documentation explaining the absence to the instructor prior to the scheduled test time or due date. The instructor reserves the right to disapprove any explanations for absences presented without prior notice and not provide the opportunity for a make-up test or other assignment. ***Students knowing they will be absent from an announced test due to a recognized absence are required to inform the instructor before the absence.*** In some cases, a make-up test or other assignment may be given early.

Late Penalties: No allowances will be made for work submitted late without suitable documentation explaining the university-approved absence to the instructor.

Expectations and Participation:

Both students and instructors have expectations of one another, many of which are mutual. Students should expect the instructor to be in class on time, to be prepared, to be attentive to students, to be available to provide help related to the course, and to make a genuine effort to help students achieve the course objectives. On those rare occasions when the instructor must miss class, students should expect suitable arrangements for the class to continue in the instructor's absence. Students should expect the instructor to devote considerable time and effort to the course.

The instructor has similar expectations of students: that students come to class on time, are prepared, are attentive and participate in class, complete class assignments and submit them on time, and make a genuine effort to meet the course objectives. The instructor expects students to devote considerable time and effort to the course.

Although videos are available for much of the course material, students are expected to attend all class periods unless they have an excused absence according to the requirements outlined by the University's provost office.

Student Responsibility for Work: Regardless of whether a student is able to come to class or not, every student is still responsible for material, assignments, and anything else that occurs in class. If a student must miss class, that student is responsible for finding out what was missed, making sure that any work due that day gets to the instructor, and acquiring any assignments or materials handed out during the absence so that they can prepare for the next class. ***This is a 3 credit-hour course and each student should be prepared to spend a minimum of 3 to 4 hours outside of class for each hour in-class.***

Instructor Communication Outside Office Hours: In this age of instant communication, it is common to think that everyone is accessible for 24/7 feedback. Please understand that the instructor has other obligations and may not be able to respond immediately to questions submitted by e-mail or voice mail. Be sure to take advantage of other resources to answer your questions if the instructor has not responded to your message in a timely manner. The student should not take this as an attempt to discourage questions, only to let the student understand that there will be times when the instructor is not available to immediately answer your questions.

Academic Integrity:

Without exception, all submitted work for this class is to be done on an individual basis. Student-teacher relationships are built on trust. For example, students must trust that teachers have made responsible decisions about the structure and content of the course, and teachers must trust that work submitted by a student was indeed done by the student. Acts which violate this trust undermine the educational process and are inconsistent with our very reason for being at ETSU.

You are encouraged to discuss the material and issues addressed in the course with members of the class and others. Helping one another understand the process for problem solving is permitted as long as submitted work is done as an individual attempt. Everyone must do his/her own work. Completing an assignment "by committee" and submitting it as an individual work is academic misconduct unless the assignment has been clearly designated as a team assignment. ***Your name on submitted work is an affirmation that the work is yours.***

The following is taken from section 5.7 "Academic Misconduct" of the East Tennessee State University Faculty Handbook, June 1, 2001:

"Academic misconduct will be subject to disciplinary action. Any act of dishonesty in academic work constitutes academic misconduct. This includes plagiarism, the changing of falsifying of any academic documents or materials, cheating, and the giving or receiving of unauthorized aid in tests, examinations, or other assigned school work. Penalties for academic misconduct will vary with the seriousness of the offense and may include, but are not limited to: a grade of 'F' on the work in question, a grade of 'F' of the course, reprimand, probation, suspension, and expulsion. For a second academic offense the penalty is permanent expulsion.

"Plagiarism is defined as follows by Black, Henry Campbell, Black's Law Dictionary, West Publishing Company, St. Paul, Minnesota, 1968 (p. 1308): 'The act of appropriating the literary composition of another, or parts or passages of his writings, or the ideas or language of the same, and passing them off as the product of one's own mind.'

"Moreover, 'To be liable for plagiarism it is not necessarily to exactly duplicate another's literary work it being sufficient if unfair use of such work is made by lifting of substantial portion thereof, but even an exact counterpart of another's work does not constitute 'plagiarism' if such counterpart was arrived at independently' (O'Rourke vs. RKO Radio Pictures, D. C., Mass., 44F. Supp. 480, 482, 483)."

Details pertaining to definitions and procedures applicable to the academic integrity and honor code policies can be found at <https://www.etsu.edu/academicintegrity/>

AI Use Policy:

Generative AI can provide outstanding support for creativity and learning. When used to generate all or most of the content of exercises submitted for this class, however, student learning is substantially harmed. Therefore, any unacknowledged content generated by AI will be considered academic misconduct. Furthermore, excessive AI-generated content in submitted

assignments - even if properly cited - may result in a grade penalty. The term "excessive" in this context refers to AI use that replaces substantial portions of the student's original thinking, problem solving, or implementation. When in doubt about whether a particular use of AI is permitted, students should ask the instructor before submitting the assignment.

The following uses of AI are encouraged, provided that any use is properly cited (e.g., tool name, date, and a description or screenshot of how it was used) when included in submitted work:

- Brainstorming ideas aimed at improving projects or assignments
- Receiving guidance to support learning
- Obtaining feedback on student-generated content

Unless otherwise specified in the assignment requirements, the use of AI to generate any of the following is prohibited and will be considered academic misconduct:

- Answers (partial or full) to assignment, quiz, or test problems
- Assignment or project design documentation
- Source code
- Digital content

During examinations, students may not use any device that records, transmits, receives, analyzes, or displays information unless explicitly authorized. This includes but is not limited to smart glasses, wearable displays, AI-assisted devices, and concealed audio or visual technology. Students requiring accommodations such as smart glasses for vision must coordinate with Disability Services to approve specific configurations and submit required documentation to the instructor at least one week prior to the required use of the device(s). Violation of this policy will be considered academic misconduct.

When AI tools are used in approved circumstances, students are responsible for verifying that all AI-generated content is factually accurate, grammatically correct, and appropriate for the assignment.

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Other Policies:

Accessibility: If you have any accessibility concerns or experience barriers related to the content, materials, activities, or assessments in this course, please contact the instructor as early as possible. Students who have documented disabilities are encouraged to register with the University's Disability Services office to ensure that approved accommodations are communicated and implemented in a timely manner.

Special Accommodations: Students registered with Disability Services for note taking or test taking accommodations should make arrangements with the instructor during the first week of the term. If a student wishes to take advantage of university-approved accommodations for a test, they must initiate the process at least 5 days, but no more than 10 days before the scheduled test date. This includes informing the instructor that they will be taking advantage of the accommodation and contacting Disability Services to schedule a time to take the test in the Disability Services facilities.

Laptop Policy: The use of laptops or smart devices in class for the purpose of note taking or viewing the online course reading is encouraged. **All other uses are prohibited.** Any student found to violate this policy will be asked to discontinue use of the device for the remainder of the class period. A second offense will result in the removal of the student's laptop privileges for the remainder of the semester.

Snow/Ice: Classes are seldom cancelled; use your better judgement if main roads are snow-covered or icy. Please listen to the radio (WETS) or visit the [University's Advisories Page](#) if there is any doubt about early morning classes being cancelled or delayed.

The following is an excerpt from the University Indement weather policy as it relates to delayed openings:

"Students are expected to report to their regularly scheduled class only if there are 30 or more minutes remaining in the session. For example, if a delayed opening is set for 10 a.m. students who have classes from 9:45 a.m. to 11:05 a.m. should report to that class at 10 a.m. Students who have classes from 9:20 a.m. to 10:15 a.m. should not report to class. In a delayed opening, all classes scheduled prior to the set time of opening and those that have less than 30 minutes remaining after the set opening time are cancelled for the day."

The policy goes on to state what the student's responsibility is if they miss class because of severe weather.

"Students will be responsible for any academic work they miss due to absences caused by severe weather conditions. It is the individual student's responsibility to take the initiative to make up any missed work, and it is the instructor's responsibility to provide a reasonable opportunity for students to complete assignments or exams missed due to such absences. Faculty members have discretion in determining whether an additional session will be added for the class or if additional work is assigned due to the closure or delayed opening."

The inclement weather policy may be accessed at https://www.etsu.edu/safety/campus_emergency/policy.php.

Use of Tobacco Products: The use of tobacco products of any type is prohibited inside all ETSU campus buildings. ETSU is a non-smoking campus. Smoking is permitted on campus only in private vehicles.

Please make sure to see the [syllabus attachment](#) provided by ETSU's [Curriculum Innovation Center](#) regarding key dates and other information.

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Use of this document is restricted to students enrolled in David Tarnoff's sections of CSCI 1900 at East Tennessee State University