Course Syllabus

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Instructor

Instructor: Dr. Sarah Hosni

Office: Dragas 1100D

email: shosni@odu.edu

Important: All email related to this course should have the phrase **CS 381** somewhere in the subject line. This flags your message in my mailbox for faster attention.

I usually respond to emails within 24-48 Hrs.

Course Readings

You can buy **either** the 7th edition **or** the 8th edition of:

- Rosen, Kenneth H., Discrete Mathematics and Its Applications, (7th ed), **ISBN:** 0073383090, McGraw Hill.
- Rosen, Kenneth H., Discrete Mathematics and Its Applications, (8th ed), **ISBN:** 9781259676512, McGraw Hill.

You do not need to buy the two editions. You will only need one copy of the textbook (either the 7th or 8th edition). You might buy the cheaper copy. I will refer to the 7th edition during the semester.

- visit the book's **companion website** ⤷ **(http://www.mhhe.com/rosen)** for electronic resources
- not all the chapters of the book are covered
- not all sections from selected chapters are covered
- we will not follow the order of the book

Course Description

ODU Catalog Description

Topics include propositional and predicate logic, rules of inference, methods of proof, set operations, functions, complexity of algorithms, growth of functions, induction, counting, relations, equivalence relations and graphs.

Instructor Course Description

This course is an introduction to the discrete structure and mathematics, which are essential components to learn algorithms and procedures for problem solving. The discrete mathematics solely focuses on the discrete objects of distinct and separate values. This branch of mathematics does not study the continuous objects which vary smoothly like real numbers (3.45701), rather it deals with objects of unconnected elements like integers – where gaps exist. To understand the distinction between the discrete and continuous objects, think of the digital and analog clocks. In analog clocks, the handle moves smoothly and the fractions of a second are counted. On the contrary, digital clocks only counts the whole numbers, like 1, 2, 3, etc.

Students in this class will learn the discrete structures and techniques required to solve problems, such as finding good sorting algorithms, performing efficient web/databases searches, mappings, analyzing algorithms, finding shortest paths between objects, figuring out how many ways are there to choose a computer password, solving problems of connectivity, designing security protocols, etc.

Prerequisites

- Classes
  - MATH 163, and
  - a grade of C or better in CS 150, CS 151, CS 153, or ENGN 150
- Skills
  - Basic Math, like common functions and equations, derivatives and integrals.
  - Basic Computer Science, like variables, data types and expressions, assignment, control-flow statements, functions, arrays, pointers, structs, and classes.

Goals and Objectives

Upon successful completion of this class, students will be able to:

1. apply methods of discrete mathematics in computer science
2. verify and proof the correctness of an argument
3. apply different techniques for solving problems
4. express ideas precisely using proper computer science vocabulary
5. construct models to translate problems into mathematical contexts
6. demonstrate familiarity and understanding of the discrete structures, including sets, relations, functions, matrices, and graphs
7. analyze and evaluate the performance of algorithms
8. reason mathematically and correctly
9. visualize and simplify problems using graphs and trees

How the Course Works

Methods of Delivery/Learning Activities

This online course employs several methods of delivery and learning activities including online lectures and presentations, threaded discussions, Web sites, video clips, reading and written assignments, self-

assessment checks, examinations, e-mail, and electronic access of information.

Rules for emails

- Identify yourself
- email to **shosni@odu.edu (mailto:aelmesal@cs.odu.edu)**
  - Please make sure to include the class name "CS-381" in the subject of your email, otherwise, I will not be able to know which class you are talking about
  - Use your university or CS Dept. e-mail account to send emails
  - Sign with your full name, course number, and meeting time
- We will use email to discuss issues that cannot be discussed on the discussion board.

Grading Criteria

The grade distribution is 40% for the weekly quizzes and 60% for the exams. There will be two exams midterm is 25% and final exam is 35%. The schedule of the exams (*midterm* and *final*) is posted in the course schedule section. In addition to the two exams, there will be weekly quizzes.

Each module is designed as a weekly "**chunk**" of work to be accomplished. The basic weekly structure is as follows. On Monday, you should start reading the chosen sections from the textbook. By Thursday morning, you should have completed all the reading and you should be ready to take the quiz.

Each weekly quiz will be available for approximately one week, closing on Saturday at 11:00 PM. Please make sure to take the quiz during the available time because the link to the quiz will disappear after the deadline. Late quizzes are not accepted for marking

Always check the announcement section for further instructions about the weekly quizzes.

Assignments	Points Possible
Weekly Quizzes	50%
Midterm Exam	20%
Final Exam	30%
Total	**100%**

The following is the grading scale used in tabulating assignment and final grades for this course:

Final Percentage Grade	Letter Grade
93 – 100	A
90 – 92.9	A-
88 – 89.9	B+
82 – 87.9	B
80 – 81.9	B-

Final Percentage Grade	Letter Grade
78 – 79.9	C+
70 – 77.9	C
68 – 69.9	C-
60 – 67.9	D
Below 60	F

Student Responsibilities

Expectations: Students are expected to

- check Canvas regularly
- read the selected chapters from textbox
- read supporting material and watch supporting videos
- complete and submit the assignment and quizzes before the due date
- attend all exams
- use time wisely and be organized
- participate actively in the class discussion, post questions, comments and responses - please post your questions on the discussion forum instead of sending emails so other students can benefits from the posted discussion
- have the motivation to work independently, e.g. solve review problems at the end of each section from the textbook
- follow the rules of sending email
- discuss private issues by email
- follow the course polices and guidelines

Time Management

Students are expected to spend 10 hours per week on the course materials and assignments. Out of 10 hours, students are expected to spend approximately 3 hours per week to read the material and another 3 hours/week for the homework and discussions.

Utilizing Online Components

Refer to the **Getting Started** (https://canvas.odu.edu/courses/209068/modules/998458) and the **Online Orientation and Course Introduction** (https://canvas.odu.edu/courses/209068/modules/998459) sections within the Canvas modules.

Student Help Resources

- **Online Student Orientation** (https://online.odu.edu/online-experience/how-succeed-odu-online-student)
- Canvas Support Services

- ○ Call Canvas 1-877-575-6559
- ○ Email Canvas **support@instructure.com (mailto:%20support@instructure.com)**
- ○ **Chat with a live representative @ Canvas** ⤷ **(https://cases.canvaslms.com/liveagentchat? chattype=admin&sfid=001A000000H1DjiIAF)**
- **ITS Help Desk (https://www.odu.edu/ts/helpdesk)** , Email: **itshelp@odu.edu (mailto:itshelp@odu.edu)** , Phone: Hampton Roads 757-683-3192 or Toll Free 877-348-6503
- **Purdue Online Writing Lab (Purdue OWL)** ⤷ **(https://owl.purdue.edu/owl/purdue_owl.html)** – Citation Styles
- **Student Success Center (https://www.odu.edu/success/center)**
- **Student Outreach & Support (https://www.odu.edu/life/dean-students/student-outreach)**
- **The Writing Center (https://www.odu.edu/al/centers/writing-center)**

Attendance

Since this is an online course, there is no mandatory attendance policy. However, students are expected to actively participate in the discussions, homework submissions, and journal writing.

Course Policies

Online Classroom Conduct (Netiquette)

Students are expected to follow good Netiquette rules. Netiquette is the accepted behavior for online participation. The following is a list of general guidelines for this course:

- Check your grammar and spelling
- Keep your comments focused on the topic
- Strive to write succinctly and clearly
- Share your knowledge and include supportive evidence for your comments
- Do not use all capital letters as that is viewed as shouting
- Avoid flaming—disrespectful language is unacceptable

Select the link to find more information on **Netiquette** ⤷ **(http://www.albion.com/netiquette/corerules.html)** .

Attendance

Since this is an online course, there is no mandatory attendance policy. However, students are expected to actively participate in the discussions, homework submissions, and journal writing.

Tests and Make-ups

The same information for homework will apply for tests and make-up work: If a situation has occurred that requires your time and attention which will prevent submitting your work on time, please notify your instructor 24 hours before the scheduled due date.

Course Disclaimer

Every attempt is made to provide a syllabus that is complete and that provides an accurate overview of the course. However, circumstances and events may make it necessary for the instructor to modify the syllabus during the semester. This may depend, in part, on the progress, needs, and experiences of the students.

ChatGPT

- Use of ChatGPT and similar such tools is strictly prohibited for this class.

University Policies

Academic Integrity

Old Dominion University is committed to students' personal and academic success. In order to achieve this vision, students, faculty, and staff work together to create an environment that provides the best opportunity for academic inquiry and learning. All students must be honest and forthright in their academic studies. Your work in this course and classroom behavior must align with the expectations outlined in the Code of Student Conduct, which can be found at **www.odu.edu/oscai (https://www.odu.edu/oscai)** . The following behaviors along with classroom disruptions violate this policy, corrupt the educational process, and will not be tolerated.

- **Cheating:** Using unauthorized assistance, materials, study aids, or other information in any academic exercise.
- **Plagiarism:** Using someone else's language, ideas, or other original material without acknowledging its source in any academic exercise.
- **Fabrication:** Inventing, altering or falsifying any data, citation or information in any academic exercise.
- **Facilitation:** Helping another student commit, or attempt to commit, any Academic Integrity violation, or failure to report suspected Academic Integrity violations to a faculty member.

Academic dishonesty will be reported to the Office of Student Conduct & Academic Integrity and may result in sanctions up to and including expulsion from the University.

Plagiarism

No plagiarism will be tolerated under any circumstances. As faculty, I am bound to report any instances of plagiarism. All cases are heard before the honor council. If found guilty, the student automatically receives a failing grade in the course, and a notice is entered into the permanent record for a period of time.

College Class Conduct

The following standards are intended to define acceptable classroom behavior that preserves academic integrity and ensures that students have optimum environmental conditions for effective learning.

1. Students must turn off cell phones and pagers during class or have them set to vibrate mode.

2. Classes are expected to begin on time, and students will respect the time boundaries established by the professor. If classroom doors are locked, students may not knock or seek entrance in other ways.

3. Students should notify instructors in advance when a class will be missed. In the event of an emergency that causes a class to be missed, instructors must be notified as soon as possible.

4. Instructors may require that cell phones and other electronic devices be left on their desks during tests or examinations.

5. Students must not engage in extraneous conversations during classes. Such acts are considered to be violations of the Code of Student Conduct.

6. Students will activate their Old Dominion e-mail accounts and check them before each class. If the student chooses to have his/her messages forwarded to another account, it is the student's responsibility to take the necessary steps to have them forwarded.

7. Consumption of food and drink during class is prohibited, except when the professor has specifically approved of such acts.

8. Offensive language, gestures and the like are disrespectful and disruptive to the teaching-learning process.

Honor Code

The Old Dominion University Honor Code will be strictly enforced. By attending Old Dominion University, you have signed a pledge accepting the responsibility to abide by the following Honor Code found at **Office of Student Conduct and Academic Integrity (http://www.odu.edu/oscai)** .

We, the students of Old Dominion University, aspire to be honest and forthright in our academic endeavors. Therefore, we will practice honesty and integrity and be guided by the tenets of the Monarch Creed. We will meet the challenge to be beyond reproach in our actions and our words. We will conduct ourselves in a manner that commands the dignity and respect that we also give to others. [ODU Honor Code]

This is an institutional policy approved by the Board of Visitors. The University Honor Code applies to all assignments.

Honor Pledge

I pledge to support the honor system of Old Dominion University. I will refrain from any form of academic dishonesty or deception, such as cheating or plagiarism. I am aware that as a member of the academic community, it is my responsibility to turn in all suspected violators of the honor system. I will report to Honor Council hearings if summoned. [ODU Honor Pledge]

By attending Old Dominion University you have accepted the responsibility to abide by this code. This is an institutional policy approved by the Board of Visitors. For more information, please visit **Policies and Student Responsibilities (https://online.odu.edu/admissions/policies-and-student-responsibilities)** .

Educational Accessibility

In compliance with PL94-142 and more recent federal legislation affirming the rights of disabled individuals, provisions will be made for students with special needs on an individual basis. The student must be identified by the university and provide a letter from the Office of Educational Accessibility (OEA), located at 1021 Student Success Center. Any accommodations will be based upon written guidelines from the Office of Educational Accessibility (OEA). All students are expected to fulfill all course requirements.

Old Dominion University is committed to ensuring equal access to all qualified students with disabilities in accordance with the Americans with Disabilities Act. The Office of Educational Accessibility (OEA) is the campus office that works with students who have disabilities to provide and/or arrange reasonable accommodations.

- If you experience a disability which will impact your ability to access any aspect of my class, please present me with an accommodation letter from OEA so that we can work together to ensure that appropriate accommodations are available to you.
- If you feel that you will experience barriers to your ability to learn and/or testing in my class but do not have an accommodation letter, please consider scheduling an appointment with OEA to determine if academic accommodations are necessary.

The Office of Educational Accessibility is located at 1021 Student Success Center and their phone number is (757)683-4655. Additional information is available at the **OEA Website (http://www.odu.edu/educationalaccessibility)** .

University Email & Electronic Messaging Systems Policies

Electronic messaging systems and communication services are provided by Old Dominion University for the purpose of enhancing productivity and maintaining effective communication.

Old Dominion University employees, students, employees of affiliated organizations, and guests, volunteers, and researchers who are provided official email accounts must activate and maintain regular access to these accounts. These accounts must be used to send and receive electronic communications related to official University business.

Failure to access the email account will not exempt individuals from their responsibility of being aware of and meeting requirements and responsibilities included in electronic communications.

Message content is the sole responsibility of the individual sending the message and users must adhere to **University Policy 3500, Use of Computing Resources (https://www.odu.edu/about/policiesandprocedures/university/3000/3500)** , and **Information Technology Standard 09.1.0, Acceptable Use Standard (http://www.odu.edu/about/policiesandprocedures/computing/standards/09/01)** . Users are also encouraged to practice generally accepted online etiquette.

Instructors retain the discretion of establishing class expectations for email and other electronic messaging communication as a part of the course requirements.

Alternative messaging services should be arranged in cases where users' access to information technology resources is limited or unavailable.

Incomplete

Documented illnesses, deaths in family, car accidents, or other traumatic occurrences call for flexibility and good judgment on the part of the student and instructor. These situations are rare and are handled individually. Should such a situation occur, students **MUST** contact **Student Outreach & Support (https://www.odu.edu/life/dean-students/student-outreach)** . Email **oducares@odu.edu (mailto:oducares@odu.edu)** or by phone 757-683-3442 to acquire the necessary documentation. An incomplete grade will only be given under the following circumstances

1. The student has completed ½ or more of the course requirements with a C or better
2. There is legitimate deficiency due to the illness or emergencies deemed acceptable to the instructor
3. There is not neglect on the student's part.

Withdrawal

A syllabus constitutes an agreement between the student and the course instructor about course requirements. Participation in this course indicates your acceptance of its teaching focus, requirements, and policies. Please review the syllabus and the course requirements as soon as possible. If you believe that the nature of this course does not meet your interests, needs or expectations, if you are not prepared for the amount of work involved - or if you anticipate that the class meetings, assignment deadlines or abiding by the course policies will constitute an unacceptable hardship for you - you should drop the class by the drop/add deadline, which is located in the ODU Schedule of Classes. For more information, please visit the Office of the Registrar.

Student Acknowledgement

"I, _____ , have completely read this syllabus and understand and agree to the course requirements".

Course Summary:

Date	Details	Due
Sat May 24, 2025	🚀 **Quiz #1 S (https://canvas.odu.edu/courses/209068/assignments/3037765)** ♿	due by 11pm
Mon May 26, 2025	🗓 **Memorial Day Holiday - No class (https://canvas.odu.edu/calendar?event_id=148942&include_contexts=course_209068)**	12am

Date	Details	Due
Sat May 31, 2025	🚀 **Quiz #2 S (https://canvas.odu.edu/courses/209068/assignments/3037768)** ⊕	due by 11pm
Sat Jun 7, 2025	🚀 **Quiz #3 S (https://canvas.odu.edu/courses/209068/assignments/3037784)** ⊕	due by 11pm
Sat Jun 14, 2025	🚀 **Quiz #4 S (https://canvas.odu.edu/courses/209068/assignments/3037789)** ⊕	due by 11pm
Thu Jun 19, 2025	📅 **Juneteenth Holiday observed - No Class (https://canvas.odu.edu/calendar? event_id=148943&include_contexts=course_209068)**	12am
Sat Jun 21, 2025	🚀 **Quiz #5 S (https://canvas.odu.edu/courses/209068/assignments/3037791)** ⊕	due by 11pm
Sat Jun 28, 2025	🚀 **Quiz #6 S (https://canvas.odu.edu/courses/209068/assignments/3037767)** ⊕	due by 11pm
Fri Jul 4, 2025	📅 **Independence Day Holiday - No Class (https://canvas.odu.edu/calendar? event_id=148937&include_contexts=course_209068)**	12am
Sat Jul 5, 2025	🚀 **Quiz #7 S (https://canvas.odu.edu/courses/209068/assignments/3037772)** ⊕	due by 11pm
Sat Jul 12, 2025	🚀 **Quiz #8 S (https://canvas.odu.edu/courses/209068/assignments/3037771)** ⊕	due by 11pm
Sat Jul 19, 2025	🚀 **Quiz #9 S (https://canvas.odu.edu/courses/209068/assignments/3037779)**	due by 11pm

Date	Details	Due
	⬤	
Sat Jul 26, 2025	🚀 **Quiz #10 S** [(https://canvas.odu.edu/courses/209068/assignments/3037785)](https://canvas.odu.edu/courses/209068/assignments/3037785) ⬤	due by 11pm
Sat Aug 2, 2025	🚀 **Quiz #11 S** [(https://canvas.odu.edu/courses/209068/assignments/3037775)](https://canvas.odu.edu/courses/209068/assignments/3037775) ⬤	due by 11pm
Mon Sep 1, 2025	📅 **Labor Day Holiday (no classes)** [(https://canvas.odu.edu/calendar?event_id=148938&include_contexts=course_209068)](https://canvas.odu.edu/calendar?event_id=148938&include_contexts=course_209068)	12am
Sun Oct 12, 2025	📅 **Fall Holiday (no classes)** [(https://canvas.odu.edu/calendar?event_id=148947&include_contexts=course_209068)](https://canvas.odu.edu/calendar?event_id=148947&include_contexts=course_209068)	12am
Mon Oct 13, 2025	📅 **Fall Holiday (no classes)** [(https://canvas.odu.edu/calendar?event_id=148939&include_contexts=course_209068)](https://canvas.odu.edu/calendar?event_id=148939&include_contexts=course_209068)	12am
Tue Oct 14, 2025	📅 **Fall Holiday (no classes)** [(https://canvas.odu.edu/calendar?event_id=148945&include_contexts=course_209068)](https://canvas.odu.edu/calendar?event_id=148945&include_contexts=course_209068)	12am
Tue Nov 4, 2025	📅 **Election Day Holiday (no classes)** [(https://canvas.odu.edu/calendar?event_id=148948&include_contexts=course_209068)](https://canvas.odu.edu/calendar?event_id=148948&include_contexts=course_209068)	12am
Thu Nov 13, 2025	📅 **Football ODU televised on ESPN * All on-campus classes after 1:00pm are canceled** [(https://canvas.odu.edu/calendar?event_id=148949&include_contexts=course_209068)](https://canvas.odu.edu/calendar?event_id=148949&include_contexts=course_209068)	12am
Wed Nov 26, 2025	📅 **Thanksgiving Holiday (no classes)** [(https://canvas.odu.edu/calendar?event_id=148944&include_contexts=course_209068)](https://canvas.odu.edu/calendar?event_id=148944&include_contexts=course_209068)	12am

Date	Details	Due
Thu Nov 27, 2025	📅 **Thanksgiving Holiday (no classes)** [(https://canvas.odu.edu/calendar?event_id=148950&include_contexts=course_209068)](https://canvas.odu.edu/calendar?event_id=148950&include_contexts=course_209068)	12am
Fri Nov 28, 2025	📅 **Thanksgiving Holiday (no classes)** [(https://canvas.odu.edu/calendar?event_id=148940&include_contexts=course_209068)](https://canvas.odu.edu/calendar?event_id=148940&include_contexts=course_209068)	12am
Sat Nov 29, 2025	📅 **Thanksgiving Holiday (no classes)** [(https://canvas.odu.edu/calendar?event_id=148941&include_contexts=course_209068)](https://canvas.odu.edu/calendar?event_id=148941&include_contexts=course_209068)	12am
Sun Nov 30, 2025	📅 **Thanksgiving Holiday (no classes)** [(https://canvas.odu.edu/calendar?event_id=148946&include_contexts=course_209068)](https://canvas.odu.edu/calendar?event_id=148946&include_contexts=course_209068)	12am
Fri Dec 5, 2025	📝 **Student Opinion Survey - Submission Link** [(https://canvas.odu.edu/courses/209068/assignments/3037792)](https://canvas.odu.edu/courses/209068/assignments/3037792) ♿	due by 11:59pm
Sat Jan 31, 2026	🚀 **Quiz 1** [(https://canvas.odu.edu/courses/209068/assignments/3037774)](https://canvas.odu.edu/courses/209068/assignments/3037774) ♿	due by 11pm
Sat Feb 7, 2026	🚀 **Quiz 2** [(https://canvas.odu.edu/courses/209068/assignments/3037783)](https://canvas.odu.edu/courses/209068/assignments/3037783) ♿	due by 11pm
Sat Feb 14, 2026	🚀 **Quiz 3** [(https://canvas.odu.edu/courses/209068/assignments/3037782)](https://canvas.odu.edu/courses/209068/assignments/3037782) ♿	due by 11pm
Sat Feb 21, 2026	🚀 **Quiz 4** [(https://canvas.odu.edu/courses/209068/assignments/3037786)](https://canvas.odu.edu/courses/209068/assignments/3037786) ♿	due by 11pm

Date	Details	Due
Sat Feb 28, 2026	🚀 **Quiz 5** (https://canvas.odu.edu/courses/209068/assignments/3037787)	due by 7pm
Sat Mar 7, 2026	🚀 **Quiz 6** (https://canvas.odu.edu/courses/209068/assignments/3037778)	due by 11pm
Sat Mar 14, 2026	🚀 **Quiz 7** (https://canvas.odu.edu/courses/209068/assignments/3037766)	due by 7pm
Mon Mar 16, 2026	📅 **Spring Holiday – no classes** (https://canvas.odu.edu/calendar? event_id=148951&include_contexts=course_209068)	12am
Fri Mar 20, 2026	📅 **Spring Holiday – no classes** (https://canvas.odu.edu/calendar? event_id=148952&include_contexts=course_209068)	12am
Wed Mar 25, 2026	🚀 **Midterm Exam** (https://canvas.odu.edu/courses/209068/assignments/3037777)	due by 11pm
Mon Mar 30, 2026	🚀 **Quiz 8** (https://canvas.odu.edu/courses/209068/assignments/3037781)	due by 11:59pm
Sat Apr 4, 2026	🚀 **Quiz 9** (https://canvas.odu.edu/courses/209068/assignments/3037790)	due by 11pm
Sat Apr 11, 2026	🚀 **Quiz 10** (https://canvas.odu.edu/courses/209068/assignments/3037780)	due by 11pm
Sat Apr 18, 2026	🚀 **Quiz 11** (https://canvas.odu.edu/courses/209068/assignments/3037770)	due by 11pm

Date	Details	Due
Sat Apr 25, 2026	🚀 **Quiz 12** **(https://canvas.odu.edu/courses/209068/assignments/3037769)** ⊕	due by 11pm
Sat May 2, 2026	🚀 **Quiz 13** **(https://canvas.odu.edu/courses/209068/assignments/3037776)** ⊕	due by 11pm
Sat May 9, 2026	🚀 **Quiz 14** **(https://canvas.odu.edu/courses/209068/assignments/3037788)** ⊕	due by 11pm
Mon May 11, 2026	🚀 **Final Exam** **(https://canvas.odu.edu/courses/209068/assignments/3037773)** ⊕	due by 11pm