

# COT 3100 Summer 2026 Syllabus

**Instructor:** Arup Guha

**Class Time:** Tuesday & Thursday 4:00pm-5:50pm

**Class Location:** NSC-101

**Office:** HEC-240

**Instructor's email address:** [dmarino@ucf.edu](mailto:dmarino@ucf.edu)

**Office Hours:** TR 2:30 – 3:30 pm (except for June 1 – 19, those will be listed)

Will be listed weekly at <https://www.cs.ucf.edu/~dmarino/ucf/OH.html>

**Course Web Page:** <https://www.cs.ucf.edu/courses/cot3100/sum2026>

**TA Information:** Provided on the course website listed above.

**Note: I do NOT check my Webcourses email. Please email me at [dmarino@ucf.edu](mailto:dmarino@ucf.edu) to contact me.**

**Course Description:** This course provides an introduction to discrete mathematics that is relevant to future computer science courses. Eight major topic areas will be covered: logic, sets, number theory, induction, counting, probability, functions and relations.

## Course Goals:

- 1) Have students learn all of the relevant definitions, symbols, proof techniques and other mathematical tools that are necessary to understand proofs and related material in upper level Computer Science courses.
- 2) Have students recognize the beauty and creativity in mathematics and to provide a basis for understanding the "method behind the madness" in proofs that seemingly come from nowhere.
- 3) Have students realize that competency in mathematics is mostly based on hard work and practice, not innate talent.
- 4) Have students realize that although there are many truly creative steps in mathematical proofs, the general structure of direct proof, proof by cases, and proof by contradiction are NOT creative and can be reliably set up once a student understands the abstract general structure of these proof techniques.

Note: No textbook for the course is necessary. The course notes and accompanying files, along with online materials should suffice to learn the course material. Any collegiate level text on Discrete Mathematics that covers the eight topics listed in the course description will be adequate for reference purposes.

<b>Grading:</b>	Pre-Test	0%
	Exam 1	20%
	Exam 2	20%
	Final Exam	30%
	Recitation Group Participation	12%
	Recitation Quizzes (2)	5% each
	Homework (8)	1% each

The dates for all of the exams, homework and quizzes are included on the schedule at the end of the syllabus. The grading scale will be based on the class average, standard deviation and overall difficulty of the assignments and exams. For further details, consult the grading philosophy posted on my web page (<http://www.cs.ucf.edu/~dmarino/ucf>). This webpage has a comprehensive explanation of my rationale (it's how all my undergraduate classes were graded) as well as a full history of how many of each letter grade I've given in every UCF class I've taught since 2003, when I started collecting and publicly posting that data.

**Plus/minus grades will be issued, when deemed appropriate.**

**This is a tentative grading policy only. It is subject to change. If a change is made, it will be announced in class.**

#### Pre-Test

A pre-test on the second class of day (Tuesday May 19, 2026) will be given based on high school mathematics topics. While it does not contribute to the class grade, the results from it will be used to form study groups in lab/recitation. In order for these groups to be formed well, it's critical that students take the pre-test seriously, so that the results are reflective of students' actual knowledge and problem-solving skills.

#### Exams

The specific format of exams and the allowable aids may vary from exam to exam and will be specified in class the class meeting right before each exam. All of the exams will take place during regularly scheduled class times as noted on the schedule in the syllabus. For both Exam 1 and Exam 2, there will be a short lecture before the exam. For the Final Exam, students will have the full class time to work on the exam.

### Recitation Group Participation

Attending class and doing practice problems correlate with success in this course. To that end, to encourage attendance, a portion of the course grade will be based on attending recitation and participating in group meetings both in and out of recitation. In recitation, on most weeks, students will work on practice problems in their assigned study groups. The TA will take attendance when he or she sees fit. **If a student comes to recitation, but doesn't respond when the TA is taking roll, then for grading purposes, the student will be treated as absent.** Since there are many recitations and students have various valid reasons to miss recitation (work, club activity, sick), and it's a headache to administratively "excuse" absences in a large class, students will simply have to attend and work actively in their groups a total of 8 times over the semester. Thus, each recitation attended (up to 8) will be worth 1% of the course grade. The remaining 4% of the course grade related to recitation will be based on group reports submitted entailing study sessions for the course (with your assigned group) both in and out of recitation.

### Recitation Quizzes

Two quizzes will be given in recitation based on recitation practice problems. Each of these quizzes will be worth 5% of the course grade.

### Homework Assignments

Homework assignments must be submitted electronically as a **.pdf** file over Webcourses. It is preferred that students produce the .pdf electronically via Word or LaTeX, but scans of written work will be accepted this semester. The goal of the homework is for students to learn how to solve novel problems on their own so that they can solve these problems on their own on exams. The homework may have both written mathematics problems and some small programs written in either C or Python (to help students see the connection between mathematics and computer science.)

**Unlike past semesters, I'll allow students to use any aids or collaboration they see fit in completing the problems to help them understand the material. (Note: So for homework only, you may use AI. My intuition leads me to believe using AI will lower students grades on exams, but you all are welcome to prove me wrong =))**

### Community Service Opportunity

If you would like to get automatic full credit for 25 points (out of 150) on the Final Exam), you can do 5 (or more) hours of community service with a registered 501(c)(3) organization **BEFORE July 23, 2026** and turn in a physical copy of the required signed form and activity summary (more details on the course web page) by the **4 pm on July 23, 2026**. The form and requisite write up **must be submitted by hand to me by that date and time**. My preference is that you hand it to me in class on July 16<sup>th</sup> or earlier so that you don't cut it so close. Also, if you don't follow the directions, I can tell you what to fix if you submit early. Every semester, a couple students are just a couple minutes late or there are students who submit at the deadline who didn't follow directions and I don't count their forms. **Please do the community service early and submit the forms to me way in advance, so that this doesn't happen to you.**

### Regrade Policy

Only I (course instructor) can do regrades. **Regrade requests can only be made on Exams 1 and 2.** All regrade requests must be made in person. When doing so, you must bring **the physical exam in question** and show the question(s) you felt were graded incorrectly.

All requests **MUST BE MADE** within one week of when the exam grade is returned for the first time in class. I will consider each request when it is presented to me and make a decision, which will then be final. Keep in mind that many times, I can't change a grade because the TA simply followed the grading criteria I provided, so please make sure you consult the grading criteria and posted solutions before making a request.

**Homework WILL not be regraded. Each assignment is only worth 1% of the course grade, making individual points on homework assignments worth very, very little. The amount of time to deal with a regrade on these small, small stakes isn't worth the change in grade that they may amount to. Note: Fixing a clerical error is not a regrade. Please bring to our attention ALL clerical errors (wrong grade recorded in Webcourses). These will be processed all the way until the end of the course.**

### **Other Important Course Policies:**

1) Cheating on quizzes or exams will not be tolerated. If a student is looking off of someone else's paper or trying to access any electronic device during a quiz/exam, they will be given a 0 on the quiz/exam and be reported to UCF's Office of Student Conduct.

2) In order to take a make-up quiz or exam, you must request one from the instructor **BEFORE THE QUIZ/EXAM.** The instructor will grant requests using his own judgment by applying the following general rule: "Make-up quizzes exams will only be given if the reason for missing the exam was out of the student's control." For example, being hospitalized unexpectedly is out of a student's control, but oversleeping or going to happy hour is not out of a student's control.

3) No late assignments will be accepted unless previous arrangements are made with the course instructor. In the case of an emergency when this is not possible, contact the instructor as soon as it is convenient to do so. The instructor has final say in granting extensions on homework assignments. In general, the same sort of rule will be followed for these extensions as for granting make-up exams as stated above. **TAs are NOT allowed to give extensions for assignments under any circumstances.**

4) Both the course web page and WebCourses will be crucial elements of the course. **It is your responsibility to check both of these before every class meeting for any updates that may be posted.** WebCourses will primarily be used for keeping track of grades, making announcements and submitting homework assignments. The course web page will have lecture notes, assignments, solutions, and other helpful links and material. Some clarifications may only be given in class, so make sure you keep up with announcements in class.

**Tentative Class Schedule:**

Week	Tuesday Class	Thursday Class	Lab/Recitation	Sunday
May 13-15	<b>NO CLASS BEFORE SEMESTER</b>	Guest Lecture – Dr. Pittman	<b>LAB CANCELLED</b>	
May 18-22	Pre-Test, Proofs, Logic	Logic	Logic Problems	<b>HW #1 Due</b>
May 26-29	Sets	Sets	Set Problems	<b>HW #2 Due</b>
June 1-5	<b>Exam #1</b>	Num Theory	NT Problems	
June 8-12	Num Theory	Num Theory	<b>Quiz #1</b>	<b>HW #3 Due</b>
June 15-19	Induction Prep	Induction	Ind. Prep Probs	
June 22-26	Induction	Induction	Induction Probs	<b>HW #4 Due</b>
June 29- July 3	<b>Exam #2</b>	Counting – Zoom Lecture	<b>LAB CANCELLED</b>	<b>HW #5 Due</b>
July 6-10	Counting	Counting/Probability	<b>Quiz #2</b>	<b>HW #6 Due</b>
July 13-17	Probability	Probability	Prob Probs	<b>HW #7 Due</b>
July 20-24	Relations	Functions	Rel/Func Probs	<b>HW #8 Due</b>
July 27-31	FE Review	<b>Final Exam</b>		

This schedule is a general time frame only and is subject to the needs of the class. It will be altered without notice but will generally follow the same progression. At the end of each class I will tell you what we will be discussing during the next class period. I will post the written class notes from class within a day of when the lecture was given.