**ITEC 122 Discrete Mathematics**

Fall 2019

**Instructor**:

Professor Dr. C. Shing

Office Davis 209

Class Time: 10:00 am - 10:50 am MWF Young Hall 305

Office Hours: M, W, F 11 am – 12 noon, M, W 2 pm - 3 pm, or by appointment

Phone 831-5996

Email cshing@radford.edu

**(Please state which class you are in when send me email)**

home page: ITEC 122-01 on D2L

**Text**:

##### (Optional) Discrete Mathematics and Its Applications, 8th Edition, By Kenneth Rosen, 2019, ISBN: 9781259731693

Description:

An introduction to discrete mathematical concepts including set theory, finite state machines, and induction..

Prerequisites: ITEC 120 ("C" or better) and MATH 121, or MATH 138 or MATH 140 or MATH 145 or MATH 151 or MATH 155. Students who have received credit for CPSC 122 may not receive credit for ITEC 122.

Goals and Objectives of the Course**:**

* To introduce certain theoretical concepts of discrete mathematics which are especially pertinent to information technology.
* To further acquaint students with the methods of mathematical problem solving in general.
* To apply mathematical theory to aid in designing and validating computer programs.

Topics:

1. Logic and sets: basic concepts, combinatorial circuits, Boolean algebra, proof
2. Counting principles: basic techniques, combinations, permutation, notation, the binomial theorem
3. Recurrence relations, mathematical induction and recursion
4. Graph theory: trees, binary trees, search algorithms, shortest path algorithms, spanning trees, connectedness, matching, cycles, applications
5. Complexity of algorithms: time and space, big O notation

**Grade Computation**: **Check your email daily**

Professionalism (Attendance): 15%, (drop the lowest)

Weekly and Daily In-class & Pop-Up Quizzes on HW 20 % (done on D2L and in class, drop the lowest, allow collaboration)

3 Midterm Exams 45% (multiple choice, take-home, no discussion)

Final Exam 20%

Students are expected to read the assigned lecture before each class. A weekly take home quiz is required to be completed by the due date on D2L. Pop quiz must be turned in before the end of the class. Every extra credit HW must be demonstrated first before submission. No extra credit HW will be graded without demonstration or after the due date. **All in-Class Quizzes must be turned in before the next class.**

Attendance Policy:

Students must attend every class. **Absences of classes for more than 2 weeks** will be awarded a grade **F** for the course no matter how you perform in the rest of categories. All excused and make-up work must be pre-approved by sending e-mail to instructor or formal documentation by either doctor or dean of students. ***Note: Students must bring a copy of the necessary lecture to each class for discussing the HW unless you can bring a laptop to access them on-line.***

Class Courtesy Policy:

Students are to be in their seats when class begins with all cell phones, pagers, and laptop computers turned off. Arriving late or leaving the room to take phone calls is disruptive to the class and instructor. The instructor will take steps (such as ask students to leave classroom) to discourage these types of behavior if necessary. **In-class activities missed due to tardiness cannot be made up.**

Checking e-mail, exploring the Internet, and/or completing assignments for other classes are not permitted during class time. Such activities during class are distracting to other students and to the class instructor. The instructor will take steps to discourage these types of behavior if necessary. **This statement applies to lab as well as to the use of wireless devices during lecture**

### Honor Code

By accepting admission to Radford University, each student makes a commitment to understand, support, and abide by the University Honor Code without compromise or exception. Violations of academic integrity will not be tolerated. This class will be conducted in strict observance of the Honor Code. Refer to your Student Handbook for details. In particular, the copying of computer assignments, in whole or in part, will be considered plagiarism. Students may discuss each other in the lab not in assignment programs. Furthermore, consulting with anyone other than the instructor on either the nature or answers to programming assignments is expressly forbidden.

Student Services

**Center for Accessibility Services:** Students seeking academic accommodations under the Americans with Disabilities Act must register with the Center for Accessibility Services (CAS) to determine eligibility. Students qualified for academic accommodations will receive accommodation letters and should meet with each course professor during office hours, to review and discuss accommodations. For more information, call 540-831-6350. [www.radford.edu/cas](http://www.radford.edu/cas)

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**Learning Assistance and Resource Center (LARC)** provides free tutoring to students who need to strengthen their academic skills. 125 Walker Hall. 540-831-7704, larc@radford.edu.

**Military Resource Center** helps military students (veterans, active duty, reservists, and dependents) to access all of the campus resources available and provides study space, transition counseling, and tutoring. 100 Calhoun Hall, military@radford.edu, 540-831-5002.

**Office of Diversity and Equity**, 314B Tyler Place, 2nd Floor, 831-5307

To report an instance of harassment or sexual assault: <http://www.radford.edu/content/diversity-equity/home/title-ix-reporting.html>



**Safe Zone** at Radford University is a collaborative effort among students, staff, and faculty to secure trustworthy allies and supportive, safe spaces on campus for students who are lesbian, gay, bisexual, transgendered, and questioning. Safe-Zone trained allies can be found across the campus and community, just look for the Safe Zone sticker.

** Substance Abuse and Violence Educations Services (SAVES):** provides education, counseling, advocacy and support for students dealing with substance abuse or sexual violence. SAVES will also help you to help a friend who is struggling with substance abuse or is a victim or survivor of sexual assault, dating violence, or stalking.Heth Hall, Room 215, 831-5709 [www.radford.edu/saves](http://www.radford.edu/saves)

**Student Counseling Services** can help with adjusting to college life, relationship or family concerns, anxiety, depression, eating disorders, and many other issues you may experience, including how to help a friend who is struggling. Tyler Hall Basement, 831-5226 [www.radford.edu/content/student-counseling/home/faq.html](http://www.radford.edu/content/student-counseling/home/faq.html)

**Writing Center** located in CHBS 4800 (above Starbucks), offers help to **CORE101 and CORE102 students** for any writing assignment for any course. One-on-one sessions with a writing consultant are available every day beginning Monday, September 25 (hours TBA). To make an appointment, login to MyRU, click on Academics, and click on Writing Center, or stop by CHBS 4800 during open hours.