Course title: Discrete Structures, Summer 2020, 3 credits

Instructor: Dr. R. Paul Mihail, 2119 Nevins Hall, Email: rpmihail@valdosta.edu

Class meeting times and location: Online

Office Hours: Available by request via phone, email, Skype or any other online audio/video venue of your choice. Please allow a day lead time.

Required Textbook:

- Sign in or create an account at learn.zybooks.com.
- Enter zyBook code: VALDOSTACS2620MihailSummer2020
- Subscribe

Software: There is no software requirement for this course.

Course Description: Propositional and predicate logic. Mathematical induction and recursion. Sets, relations, functions. Graphs and trees. Boolean algebra and computer logic. Finite state machines and computability.

Learning Outcomes: Students will understand basic programming terminology and techniques. More specifically students will:

- 1. Explain propositional and predicate logic and construct truth tables for logical expressions
- 2. Solve set theory problems involving set operations like union, intersection, set difference etc.
- 3. Explain different types of functions and relations involving sets.
- 4. Explain the principle of mathematical induction; apply inductive proof for recurrence relations.
- 5. Explain basics of counting techniques including permutation and combination.
- 6. Explain the concepts of graphs and trees; apply related algorithms on sample graphs and trees.
- 7. Apply Boolean logic to solve different combinatorial circuit problems involving logic gates.
- 8. Explain basic concepts of finite state machines.

Cell phone policy:

Usage of cell phones in the classroom is prohibited, with the exception of emergengy calls. Texting or otherwise using your mobile device in the classroom will result in dismissal from the class period.

Course Prerequisites: MATH 1112, MATH 1113, MATH 1261, or MATH 2261 with a grade of "C" or better.

Assessment:

The grade for this course will be calculated as follows:

- Test 1: 15%
- Test 2: 20%
- Test 3: 20%
- Final exam: 20%
- Assignments: 25%

Grades will be assigned according to the following scale:

90-100% = A80-89.99% = B70-79.99% = C60-69.99% = DBelow 60% = F

Exams:

- Exam 1: Wednesday June 24th, covers chapters 1, 3, 4 and 5
- Exam 2: Wednesday July 8, covers chapters 7, 10, and 11
- Exam 3: Wednesday July 22, covers chapters 12 and 13
- Exam 4: Wednesday July 29th, covers chapters 1, 3, 4, 5, 7, 10, 11, 12, 13

Due dates Each Wednesday, zyBooks participation and challenge activities are due per the schedule below. Please note that additional exercises are there for your convenience, with solutions a click away.

- Chapters 1 and 3: due Wednesday Jun 10
- Chapters 4 and 5: due Wednesday Jun 24
- Chapters 7 and 10: due Wednesday Jul 1

- Chapter 11: due Wednesday July 8
- Chapter 12: due Wednesday July 15
- Chapter 13: due Wednesday July 22
- Chapter 14: due Monday July 27th

Academic Honesty:

Students are expected to do their own work. Cheating is considered a serious offense by the University. Any form of "seeking an unfair academic advantage" is considered cheating. If an assignment is designated as "cooperative learning" or "partner work", then you are allowed, encouraged, in fact required, to work with your partner or team. These are the ONLY students you are allowed to work with. Of course you can still ask questions of your instructor. Any other assignment is individual work. That includes programs, lab tests, lecture tests, and quizzes.

Withdrawing:

If you decide to leave the class, please do it officially. There is a date on the Academic Calendar past which you are not allowed to drop for academic reasons. We'd much rather give a W grade than an F. Don't just stop coming to class - you WILL get an F! Take care of your transcript! All policies associated with this course are subject to revision. Reasonable notification will be provided to students prior to any major changes.

New Withdrawal Policy (5 W Policy): Effective Fall 2010, all undergraduate students are limited to five course withdrawal (W) grades for their entire enrollment at Valdosta State University. Once a student has accumulated five W grades, all subsequent withdrawals (whether initiated by the student in BANNER or initiated by the instructor on the proof roll) will be recorded as WF. The grade of WF is calculated as an F for GPA purposes. To get more details about this policy, students are strongly recommended to check the following link: http://www.valdosta.edu/academic/WithdrawalPolicy.shtml

Extra Help: Do not hesitate to come to my office during office hours or by appointment to discuss a homework problem or any aspect of the course. There are also tutors available Monday through Friday, see Mr. Said Fares (office in 1126 Nevins Hall) for more information. There is also the Student Success Center on campus located on the ground floor of the Langdale Residence Hall. The Student Success Center offers free one-on-one tutoring for core courses, success workshops, etc. You can find more information at http://www.valdosta.edu/academics/student-success-center/.

Attendance Policy: Please keep in mind that attendance is extremely important for this course. You are expected to show up for lectures and participate. In case you have to miss class, please make sure you ask for notes or see your professor. If you have a valid university excuse, please notify your professor as soon as possible.

Accommodation for Disabilities: If you have a documented disability that requires academic accommodations, please contact your professor as soon as possible. In order to receive accommodations in this course, you must provide a Letter of Accommodation from the Access Office for

Students with Disabilities located in Farver Hall. The phone numbers are 229-245-2498(V/VP) and 229-219-1348(TTY). Accommodations can be made for all parts of the course. We only make special arrangements for class activities after we receive the letter.

Student Opinion of Instruction: At the end of the term, all students will be expected to complete an online Student Opinion of Instruction survey (SOI) that will be available on BANNER. Students will receive an email notification through their VSU email address when the SOI is available (generally at least one week before the end of the term). SOI responses are anonymous to instructors/administrators. Instructors will be able to view only a summary of all responses three days after they have submitted final grades. While instructors will not be able to view individual responses or to access any of the data until after final grade submission, they will be able to see which students have or have not completed their SOIs, and student compliance may be considered in the determination of the final course grade. These compliance and non-compliance reports will not be available once instructors are able to access the results. Complete information about the SOIs, including how to access the survey and a timetable for this term is available at http://www.valdosta.edu/academic/OnlineSOIPilotProject.shtml.

Title IX Statement: Valdosta State University (VSU) is committed to creating a diverse and inclusive work and learning environment free from discrimination and harassment. VSU is dedicated to creating an environment where all campus community members feel valued, respected, and included. Valdosta State University prohibits discrimination on the basis of race, color, ethnicity, national origin, sex (including sexual harassment and sexual violence), sexual orientation, gender identity, religion, age, disability, genetic information, or veteran status, in the University's programs and activities as required by applicable laws and regulations such as Title IX. The individual designated with responsibility for coordination of compliance efforts and receipt of inquiries concerning nondiscrimination policies is the University's Title IX Coordinator: the Director of the Office of Social Equity, titleix@valdosta.edu, 1208 N. Patterson St., Valdosta State University, Valdosta, Georgia 31698, 229-333-5463.