


<b>COURSE TITLE BLACKBOARD SITE</b>	MCS 2523 Discrete Mathematics and its Applications Fall 2012 – <a href="http://my.ltu.edu">http://my.ltu.edu</a> and select CRN 2053
<b>INSTRUCTOR</b>	Bashkim Zendeli Lawrence Technological University Contact Information bzendeli@ltu.edu 248.204.3519 Office: S-123B 248.204.3519
<b>SCHEDULE</b>	Aug 31, 2012 – Dec 22, 2012  Refer to <a href="http://www.ltu.edu/registrars_office/calendar_final_exam.index.asp">http://www.ltu.edu/registrars_office/calendar_final_exam.index.asp</a> for the last date to withdraw and other important registration related information.
<b>LEVEL/ HOURS PREREQUISITE</b>	Undergraduate Degree / 3 credit hours Admission / prerequisite requirements MCS 1524
<b>REQUIRED TEXT</b>  (See Blackboard for additional resources)	Discrete Mathematics and its Applications 7-th Ed. ISBN# 978-0-07-338309-5 Kenneth H. Rosen  Publisher: McGraw-Hill <a href="http://www.mhhe.com">www.mhhe.com</a>  <a href="http://lawrence-tech1.bkstore.com/bkstore/TextbookSelection.do?st=489">http://lawrence-tech1.bkstore.com/bkstore/TextbookSelection.do?st=489</a>
<b>ADDITIONAL RESOURCES</b>	LTU Online student resources: <a href="http://www.ltu.edu/ltuonline/">http://www.ltu.edu/ltuonline/</a>
<b>TECHNICAL SUPPORT</b>	Technical support for using Blackboard is provided by the Helpdesk. Visit <a href="http://www.ltu.edu/ehelp">www.ltu.edu/ehelp</a> or 248.204.2330 or <a href="mailto:helpdesk@ltu.edu">helpdesk@ltu.edu</a> . Send the Help Desk a form detailing any issues by clicking here <a href="http://tinyurl.com/3yqrvne">http://tinyurl.com/3yqrvne</a> .

## COURSE SCHEDULE FOR TRADITIONAL SEMESTER COURSES

This fully online course begins with a partial week online course orientation period to familiarize yourself with the online learning environment and to meet online or via the phone with your instructor. Each subsequent week starts on a Wednesday and ends on a Tuesday.

### Table of Contents

Chapter 1	The foundations: Logic and Proofs 1.1-1.8
Chapter 2	Basic Structures 2.1-2.6
Chapter 3	Algorithms 3.1-3.3
Chapter 4	Number Theory and Cryptography 4.1-4.6
Chapter 5	Induction and Recursion 5.1-5.5
Chapter 6	Counting 6.1-6.6
Chapter 8	Advanced Counting Techniques 8.1- 8.6
Chapter 10	Graphs 10.1-10.5
Chapter 11	Trees 11.1-11.5

Dates	Modules	Topics / Readings	Assignments Due
Prior to Semester Start and Aug.30	Module 0	Overview of textbook Online Learning Orientation Course Orientation and group formation	Course orientation Instructor conversation Individual pre-assessment Propose teams
Week of Aug.31-Sep.6	Module 1	Chapter 1 – Sec.1.1-1.4	HW#1 Module 1 DQ 1 Due: Sep.6, 2012
Week of Sep.7-13	Module 2	Chapter 1 – Sec.1.4-1.8	HW #2 Module 2 DQ2 Due: Sep.13, 2012
Week of Sep.14-20	Module 3	Chapter 2- Sec.2.1-2.3	HW#3 Module 3 DQ3 Due: Sep.20, 2012
Week of Sep.21-27	Module 4	Chapter 2-Sec.2.4-2.6	HW#4 Module 4 DQ4 Due: Sep.27, 2012
Week of Sep.28-Oct.4	Module 5	Chapter 3-Sec.3.1-3.3	HW#5 Module 5 DQ5 Due: Oct.4, 2012
Week of Oct.5-11	Module 6	Chapter 4 Sec.4.1-4.3	HW #6 Module 6 DQ6 Due: Oct.11, 2012
Week of Oct.12-18	Module 7	Chapter 4 Sec.4.4-4.6	HW#7 Module 7 DQ7 Midterm Exam Ch#1-4 Due: Oct.18, 2012

Dates	Modules	Topics / Readings	Assignments Due
Week of Oct.19-25	Module 8	Chapters 5 Sec.5.1-5.3	HW #8 Module 8 DQ8 Due: Oct.25, 2012
Week of Oct.26-Nov.1	Module 9	Chapter 5 Sec.5.4-5.5	HW #9 Module 9 DQ9 Due: Nov.1, 2012
Week of Nov.2-Nov.8	Module 10	Chapter 6 Sec.6.1-6.3	HW #10 Module 10 DQ10 Due: Nov.8, 2012
Week of Nov.9-15	Module 11	Chapter 6 Sec.6.4-6.6	HW#11 Module 11 DQ11 Due: Nov.15, 2012
Week of Nov.16-22	Module 12	Chapter 8 Sec.8.1-8.3	HW#12 Module 12 DQ12 Due: Nov 22, 2012
Week of Nov 23-29	Module 13	Chapter 8 Sec.8.4-8.6	HW#13 Module 13 DQ13 Due: Nov.29,2012
Week of Nov.30-Dec6	Module 14	Chapter 10-Sec.10-10-1-10.4	HW#14 Module 14 DQ14 Due: Dec.06,2012
Week of Dec.7-Dec14	Module 15	Chapter 11 Sec.11.1,11.4,11.5	HW#15 Module 15 DQ15 End of Semester Student Survey FINAL EXAM Due: Dec.14,2012

## STUDENT EVALUATION

Letter grades are awarded based on the total number of points achieved.  
5 points are deducted for each day of late assignments.

EXAMPLES:

Assignments	Points
Midterm Exam	200
Participation	150
Homework	150
Final Exam	200
Total Points	700

Class Points	Letter Grade
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96 and above	A
90 – 95	A-
87 – 89	B+
83 – 86	B
80 – 82	B-
77 – 79	C+
73 – 76	C
70 – 72	C-
60 – 69	D (Undergrad Only)
59 and below	F

*Note: Grades lower than a "B" fall below the LTU graduate standard*

### EDUCATIONAL GOALS

**Course objectives/Outcomes:** At the end of the course students will learn a particular set of mathematical facts and know how to apply them; moreover students will learn how to think logically and mathematically using different ways problems are solved. In conclusion students will be able to do mathematical reasoning, combinatorial analysis, algorithm thinking and apply in their area of study, i.e. computer science, data networking, other diverse areas as chemistry, biology, business, and the internet. To learn the fundamentals of the Mathematics this is most directly applicable to computer science.

**Course Description:** Topics include logic, proofs, sets, algorithms, integers, math induction, recursive definitions, counting principles, permutations, combinations, recurrence relations, inclusion-exclusion, graphs, and trees.

### PREREQUISITE SKILLS

Equations and inequalities, functions and graphs, lines, parabolas, systems of equations, exponential and logarithmic functions, mathematics of finance, matrix algebra, linear programming, and trigonometry.

### INSTRUCTIONAL METHODS AND COURSE ORGANIZATION

Your course is a highly interactive course in which you will spend your time in front of a computer with pencil and paper. You will have power point presentations for each chapter from the textbook and practice problems and take practice quizzes on the computer at a pace, which is comfortable and successful for you. This is an online course and the online meetings will be done in an asynchronous fashion, which means at times that are convenient to each individual student. You will not be required to "log-on" to Blackboard at any pre-set times. It is up to each individual student to select the times and days of the week in which to participate. In this course you will have an opportunity to demonstrate the ability to be self-motivated, do their best work, be active and responsible learners and develop strong mathematics skills necessary for the next math course.

**Blackboard Learning Environment** – Blackboard at my.ltu.edu contains the syllabus, all assignments, reading materials, streaming videos, narrated PowerPoint mini-lectures, podcasts, written lecture notes, chapter quizzes, links to Web resources, and discussion forums. You will submit all assignments via Blackboard, and are expected to participate regularly in discussion topics. Please take time to familiarize yourself with the organization of the Blackboard site. You will want to check the site frequently for announcements reminding you of new resources and upcoming assignments.

**Student/Instructor Conversations** – Students keep in touch with the instructor via e-mail messages, telephone conference calls, and IM conversations.

**Self-Assessments** – Pre- and post- self-assessment tools will help students measure their entering skills and progress during the course.

**Required Reading** – Textbook chapters should be read according to the schedule outlined in the syllabus. Chapters will be discussed online.

**Publisher Web Site** – A publisher web site at <http://www.mhhe.com/rosen> includes instructional materials, PowerPoint slides, case studies, application exercises, and practice quizzes. You should make use of as many of these resources as you need to be successful.

## CLASS POLICIES AND EXPECTATIONS

*I plan to offer you a valuable learning experience, and expect us to work together to achieve this goal. Here are some general expectations regarding this course:*

Each student has a LTU email account. If you wish to use a different email address for this course, please **change your email address in Blackboard under “Blackboard Tools”, then “Personal Information”** and send an email to me so I can store your address in my email directory.

Readings, discussion forum participation, and written assignments must be completed according to the class schedule. It is important to contact the instructor as needed to discuss personal needs regarding course requirements and assignments.

It is essential that all students actively contribute to the course objectives through their experiences and working knowledge.

All assignments must be submitted on schedule, via the assignment link in Word doc.  
If you are late with an assignment, contact the instructor ASAP.

Assignments must be completed to an adequate standard to obtain a passing grade. Requirements for each assignment are detailed in this syllabus.

At midterm and at the end of the course, you will be invited to participate in a University evaluation of this course. Your feedback is important to the University, to LTU Online, and to me as an instructor, and I encourage you to participate in the evaluation process.

It is important for you as students to know what to expect from me as your instructor:

- I will be available to you via e-mail and phone, and will promptly reply to your messages.
- I will be available to you for face-to-face appointments as requested.
- I will maintain the Blackboard web site with current materials, and will resolve any content-related problems promptly as they are reported to me.
- I will send out a weekly e-mail update to all class members to guide upcoming work.

- I will return all assignments to you promptly, and will include individualized comments and suggestions with each assignment.
- I will hold our personal written or verbal communications in confidence. I will not post any of your assignments for viewing by the class without requesting your approval in advance.
- I will treat all members of the class fairly, and will do my best to accommodate individual learning styles and special needs.
- If any of these points need clarification, or when special circumstances arise that require my assistance, please contact me so that we can discuss the matter personally.

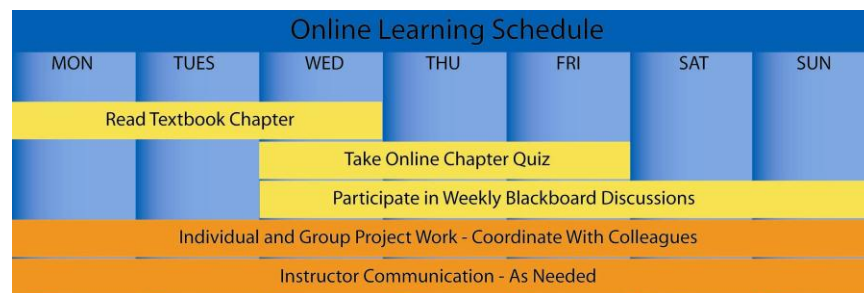
## PRACTICAL GUIDELINES FOR CLASS LOAD EXPECTATIONS

A three-credit course generally requires at least nine hours per week of time commitment.

Here are some practical guidelines to help schedule your time commitments for this online course:

- A 14-week semester (the summer semester is compressed into 10 weeks) would require at least 126 hours of time commitment to successfully complete all readings, activities, assignments, and texts as described in this syllabus.
- You should reserve at least 6 hours per week to read the required textbook chapters and resources, participate in online discussions, review presentation materials, and work through online quizzes. This effort will total at least 84 hours over the course of the semester.
- You should organize your remaining time to roughly correspond with the point value of each major assignment. This means that you should plan to spend at least:
  - 8-9 hours preparing your case study review;
  - 24-40 hours working with your group on the three parts of your semester-long project;
  - 8-9 hours working on the various components of your reflective consolidation (final exam).

These guidelines may not reflect the actual amount of outside time that you – as a unique individual with your own learning style – will need to complete the course requirements. The number of hours each week will vary based on assignment due dates, so please plan ahead to insure that you schedule your academic, work, and personal time effectively. The following graphic can be used to guide you in planning your weekly course work to remain on schedule:



## ASSIGNMENT DETAILS

Course assignments and evaluation criteria are detailed below. Please review these requirements carefully. See the section Academic Resources / Assessment Guidelines for information about assessment of written and oral presentations.

Details for all assignments are shown below. Please note that you should not submit any assignments to the Blackboard “Digital Drop Box.” All assignments in Word or PDF are submitted using the Blackboard “Assignments” or “SafeAssign” function.

Some assignments are also posted to the Blackboard Discussion Forum for student comments.

### Assignment Late Policy

You must complete all assignments by the due dates.  
Late assignment will be deducted 5 points for each day.

### Online Participation 10 points

Each student is expected to actively participate in online activities. Class participation is evaluated to a maximum of 10 points based on:

Up to 10 points – Actively participating in Blackboard discussion forums, responding to discussion questions posted by the instructor, and interacting positively with other students.

### Homework 10 points

Up to 10 points – for each homework assignment in each module.

Copy the original problem from your textbook; include the page number and the number selected.

Show all your work in word or PDF doc and submit for grading.

### SYLLABUS ADDENDA

Please see the LTU Online “Current Students” web site <http://www.ltu.edu/ltuonline/> for comprehensive information about Lawrence Tech’s academic services, library services, student services, and academic integrity standards. The content of this web site is explicitly included as syllabus requirements.

The LTU Online “Current Students” web site also includes grading rubrics used by your instructor to evaluate written assignments, discussion forum participation, and group assignments. Please note that the SafeAssign anti-plagiarism product will be used for written assignments submitted for this course. Please see the instructions included on the LTU Online web site regarding the use of the SafeAssign product.