

CS 1200
Discrete Mathematics For Computer Science
Spring 2017

Prerequisites: COMP SCI 1570
Instructor: A. R. Hurson hurson@mst.edu
Office: 323 CS Building
Office Hours: M, W, F; 13:00-14:00

Text: *Discrete Mathematics with Applications (4th edition) by Susanna Epp.*

Outline:

- 1) Introduction
- 2) Logic of Compound Statements
 - a. Logic Forms
 - b. Conditional Statements
- 3) Logic of Qualified Statements
 - a. Predicates and Qualified Statements
 - b. Statements with Multiple Quantifiers
- 4) Proof Methods
 - a. Direct proof
 - b. Indirect proof
- 5) Sequences and Induction
- 6) Set Theory
 - a. Definitions
 - b. Properties
- 7) Functions; injective, surjective, bijective; hashing
- 8) Relations
 - a. Reflexivity, Symmetry, and Transitivity
 - b. Equivalence relations
- 9) Counting and Probability
 - a. Sample Spaces,
 - b. Multiplication Rule,
 - c. Permutations & Combinations, Addition Rule,
 - d. Difference Rule,
 - e. Inclusion/Exclusion Rule,
 - f. Pigeonhole Principle
- 10) Graphs and Trees
 - a. Definition
 - b. Trails, Paths, and Circuits
 - c. Matrix representation of graphs
 - d. Trees
 - e. Rooted Trees

Administrative:

Homeworks	10%
Mid-term Exams and quizzes	50%
Final Exam (Comprehensive)	30%
Active class participation	10%

I am expecting **class attendance** and **proactive class participation**

Makeup examinations & Extensions

There will be no makeup exams/quizzes (except for documented medical reason and highly unusual unexpected events).

Exams

There will be two mid-term exams and one comprehensive final exam during final exams week.

Submission Guidelines

Hardcopy of homework assignments are collected in class,

It is encouraged to work as a group (at most two people per group) on homework assignments (grouping is fixed throughout the semester).

- **Course Policies**

Missouri University of Science and Technology is committed to the safety and well-being of all members of its community. US Federal Law Title IX states that no member of the university community shall, on the basis of sex, be excluded from participation in, or be denied benefits of, or be subjected to discrimination under any education program or activity. Furthermore, in accordance with Title IX guidelines from the US Office of Civil Rights, Missouri S&T requires that all faculty and staff members report, to the Missouri S&T Title IX Coordinator, any notice of sexual harassment, abuse, and/or violence (including personal relational abuse, relational/domestic violence, and stalking) disclosed through communication including but not limited to direct conversation, email, social media, classroom papers and homework exercises.

Missouri S&T's Title IX Coordinator is Vice Chancellor Shenethia Manuel. Contact her directly (manuel@mst.edu; (573) 341-4920; 113 Centennial Hall) to report Title IX violations. To learn more about Title IX resources and reporting options (confidential and non-confidential) available to Missouri S&T students, staff, and faculty, please visit <http://titleix.mst.edu>.

- **Academic Alert System** <http://academicalert.mst.edu>

The purpose of the [Academic Alert System](http://academicalert.mst.edu) is to improve the overall academic success of students by improving communication among students, instructors and advisors; reducing the time required for students to be informed of their academic status; and informing students of actions necessary by them in order to meet the academic requirements in their courses.

- **Disabilities** <http://dss.mst.edu>

If you have a documented disability and anticipate needing accommodations in this course, you are strongly encouraged to meet with the instructor as early as possible in the semester. You will need to request that the [Disability Support Services](#) staff send a letter to the instructor verifying your disability and specifying the accommodation you will need before the instructor can arrange your accommodation. Disability Support Services is located in 204 Norwood Hall, their phone number is 341-4211, and their E-mail is dss@mst.edu.

- **A Student Honor Code and Academic Integrity**

The Honor Code can be found at this link: <http://stuco.mst.edu/about/honor.shtml>. Please read and reflect upon the Honor code and its emphasis on HONESTY and RESPECT.

Page 30 of the Student Academic Regulations handbook describes the student standard of conduct relative to the University of Missouri System's Collected Rules and Regulations section 200.010, and offers descriptions of academic dishonesty including cheating, plagiarism or sabotage (<http://registrar.mst.edu/academicregs/index.html>).

Incidences of Academic Dishonesty will typically result in zero grades for the respective course components, notification of the student's advisor, the student's department chair, and the campus undergraduate studies office, and further academic sanctions may be imposed as well in accordance with the regulations. Note that those who allow others to copy their work are just as guilty of plagiarism and will be treated in the same manner.

- **S&Tconnect:** <https://blackboard.mst.edu/> (S&Tconnect tab)

S&Tconnect provides an enhanced system that allows students to request appointments with their instructors and advisors via the S&Tconnect calendar, which syncs with the faculty or staff member's Outlook Exchange calendar. S&Tconnect will also facilitate better communication overall to help build student academic success and increase student retention. S&Tconnect Early Alert has replaced the Academic Alert system used by Missouri S&T. If training is needed, please contact Rachel Morris at rachelm@mst.edu or 341-7600.

- **Classroom Egress Maps:**

Please familiarize yourself with the classroom egress maps posted on-line at: <http://registrar.mst.edu/links/egress/>.

- **LEAD Learning Assistance** <http://lead.mst.edu>

The Learning Enhancement Across Disciplines Program (LEAD) sponsors free learning assistance in a wide range of courses for students who wish to increase their understanding, improve their skills, and validate their mastery of concepts and content in order to achieve their full potential. LEAD assistance starts no later than the third week of classes. Check out the online schedule at <http://lead.mst.edu/assist>, using zoom buttons to enlarge the view. Look to see what courses you are taking have collaborative LEAD learning centers (bottom half of schedule) and/or Individualized LEAD tutoring (top half of the schedule). For more information, contact the LEAD office at 341-7276 or email lead@mst.edu.

- **The Burns & McDonnell Student Success Center**

The Student Success Center is a centralized location designed for students to visit and feel comfortable about utilizing the campus resources available. The Student Success Center was developed as a campus wide initiative to foster a sense of responsibility and self-directedness to all S&T students by providing peer mentors, caring staff, and approachable faculty and administrators who are student centered and supportive of student success. Visit the B&MSSC at 198 Toomey Hall; 573-341-7596; success@mst.edu; facebook: www.facebook.com/mstssc; web: www.studentsuccess.com.