**Syllabus of Math2345: Discrete Mathematics**

3 credit hours, Fall 2014

Instructor: Dr. Taixi Xu, Office R2-328, email: txu@spsu.edu

Meetings: Section 002: 10:00 – 10:50 MWF Q216
 Section 004: 2:30 – 3:45 MW J215B

Office Hours: 4:00pm – 5:30pm MW, 2:00pm-4:00pm F.
 If you would like to meet the instructor other times, make an
 appointment by email.

Web Site: http://fac-web.spsu.edu/math/txu/math2345/

Calculator: Any TI-calculator is fine.

Text Book: **Discrete Mathematics with Applications** 3e, by Susanna S. Epp,
 Brooks/Cole 2004

 ISBN-13: 978-0-534-35945-4

ISBN-10: 0-534-35945-0

CourseAn introduction to the fundamentals of discrete mathematics. Topics include
Objectives:sets, formal logic, methods of proof, counting, relations, functions, graphs and
 trees, and finite state automata.

Learning Upon completing this course students should be able to:
Outcomes: 1. Write a correct formal proof.
 2. Write the converse, contrapositive, and negation of a statement.
 3. Determine whether a relation is reflexive, symmetric, or transitive.
 4. Identify isomorphism invariants of graphs
 5. Construct minimal spanning trees for weighted graphs using Kruskal's
 and Prim's algorithms

Evaluation: There will be three tests worth 100 points each, and a comprehensive final exam worth 150 points. Quizzes will be worth a total of 100 points. The lowest scores for both tests and quizzes will be dropped. 50 points will be reserved for class participation. The grades may be curved to a normal distribution if necessary at the end of the semester.

Grading: Tests: 200 points 90% - 100% Grade A
Quizzes: 100 points 80% - 89% Grade B
Class Participation: 50 points 70% - 79% Grade C
Final Exam: 150 points 60% - 69% Grade D
Total: 500 points Below 60% Grade F

Schedule: Test 1 – Mon. Sep. 15
Test 2 – Mon. Oct. 20
Test 3 – Mon. Nov. 24
Final Exam: TBA

Make-ups: Make-ups will only be given at the discretion of the instructor, and
with a valid excuse (proof documents needed) for the absence. In order to request a make-up you must email the instructor prior to the exam or quiz.

Homework: Homework will be assigned section-by-section and should be done on time. Some of them will be discussed at the beginning of the next class. Remember that you cannot learn this subject without doing the homework.

Attendance: Regular attendance is essential. You are strongly recommended to attend every class. A signup sheet will be passing around to keep track of attendance. You are responsible for knowing any material discussed and any announcements made in class, whether you are present or not.

Cell Phones: Please turn off all cell phones before class begins. Except in the case of an emergency, cell phone use, including texting, is not permitted in this class.

Honor Code: SPSU has an Honor Code and a new procedure relating to when academic misconduct is alleged. All students should be aware of them. Information about the Honor Code and the misconduct procedure may be found at <http://spsu.edu/honorcode/>

Disability Students with disabilities who believe that they may need
Statement: accommodations in this class are encouraged to contact the counselor
 working with disabilities at (678) 915-7226 as soon as possible to better
 insure that such accommodations are implemented in a timely fashion.

Important Wed. Aug. 13 First Day of Class
Dates: Mon. Aug. 18 End of Drop/Add
 Mon. Sep. 1 Labor Day Holiday
 Thur. Oct. 2 Withdrawal Day
 Nov. 26 – Nov. 28 Thanksgiving Holiday
 Mon. Dec. 1 Last Day of Class
 Wed. Dec. 3 – Tue. Dec 9 Final Exams

Note: The instructor of the course reserves the right to make changes on this syllabus if it is necessary. In such events, students will be notified of any changes ahead of time by the instructor.

**Math2345:** **Homework Assignment**

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| **Section** | **Date Assigned** | **Homework Problems** |
| §1.1 |  | #6, 7, 8, 9, 14, 15, 16, 17, 18, 19, 23, 26, 27, 29, 30, 31, 32, 33, 34, 35, 37, 41, 42, 43, 44, 47, 49 |
| §1.2 |  | #5, 7, 9, 11, 13, 15, 16, 17, 18, 19, 20, 21, 28, 29, 30, 32, 33, 35, 42, 43, 44, 45, 46, 47, 48 |
| §2.1 |  | #1, 3, 9, 11, 13, 14, 15, 16, 17, 18, 19, 21, 23 |
| §2.2 |  | #1, 2, 3, 4, 9, 10, 11, 13, 18, 19, 23, 25, 27, 28, 38, 37, 40, 43, 45, 46 |
| §2.3 |  | #15, 17, 19, 21, 35 |
| §3.1 |  | #1, 4, 5, 6, 7, 8, 9, 11, 12, 13, 17, 24, 27, 28, 29, 31, 39, 41, 44, 47, 48, 49, 53, 54 |
| §3.3 |  | #3, 7, 12, 15, 18-28 |
| §3.6 |  | #3, 5, 12, 14, 17, 19, 23, 24, 26 |
| §4.1 |  | #1, 3, 7, 11, 12, 15, 20, 22, 26, 27, 33, 35, 39, 41, 42, 43, 44, 45, 46, 47, 48 |
| §4.2 |  | #1, 6, 8, 11, 12, 15, 16, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 31 |
| §4.3 |  | #2, 4, 9, 11, 12, 16, 17, 19, 20, 22 |
| §5.1 |  | #1, 3, 5, 8, 9, 10, 12, 13, 18, 19, 21, 26, 27, 28, 29, 30 |
| §6.1 |  | #1-19 odd |
| §6.2 |  | #2, 4, 8, 9, 10, 11, 12, 14, 15, 17, 20, 28-36 |
| §6.3 |  | #1, 3, 4, 6, 9, 11, 14, 17, 20, 21 |
| §6.4 |  | #1, 3, 4, 5, 6, 9, 15, 22 |
| §6.5 |  | #2, 3, 4a, 4b, 10, 11, 12, 13, 14, 15a, 16a |
| §6.7 |  | #1, 3, 5, 10, 11, 13, 15, 17, 18, 24, 25, 27, 31, 34 |
| §10.1 |  | #1, 6, 7, 9, 10, 11, 15, 24, 25, 27 |
| §10.2 |  | #1, 2, 4, 6, 8, 9, 10, 11, 12, 14, 17, 18, 19, 20, 23, 25, 33, 37 |
| §11.1 |  | #1, 3, 5, 8, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 27, 33, 34, 36, 44, 45 |
| §11.2 |  | #1, 7, 8, 9, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 47a, 48a, 49 |
| §11.4 |  | #6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18 |
| §11.5 |  | #3, 5, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22, 23, 25, 27, 30, 32 |
| §11.6 |  | #1, 3, 4, 5, 6, 7, 8, 9, 11 |
| §12.2 |  | #2, 4, 5, 8, 9, 14, 15, 16, 21, 22, 25, 26 |