Instructor: Dr. Mark Thompson  
Office: NTDP F264  
Telephone: 940/369-7055  
E-mail Address: Mark.Thompson2@unt.edu  
Class Location/Time: NTDP D209A/B, MoWe 2:30 – 3:50 PM  
Office Hours: MoWe 12:30 – 2:30 PM TuTh 12:00 – 1:00 PM or by appointment  
Every attempt will be made to answer e-mails within 24 hours.  
Prerequisites: CSCE 2110.  
Blackboard This course will use Blackboard, a Web-based course management system, to distribute course materials, communicate and collaborate online, post grades and submit assignments. You are responsible for checking the Blackboard course site regularly for class work and announcements.  
TA/Grader Keshavan Ravi E-mail: KeshavanRavi@my.unt.edu  
Peer Mentor Aaron Tabor E-mail: AaronTabor@my.unt.edu

**COURSE DESCRIPTION**

This course is intended to emphasize the understanding of non-linear data structures, and elementary graph algorithms, throughout theoretical analysis, as well as experimentation. The lectures will emphasize the theoretical aspects, where as a number of class assignments will cover the programming aspects.

**COURSE OUTCOMES**

Course outcomes are measurable achievements to be accomplished by the completion of a course. These outcomes are evaluated as part of our ABET accreditation process.

1. Understand dictionary/search data structures (lists, trees, and hash tables).
2. Understand graph representations (adjacency lists and matrices), graph algorithms (BFS, DFS), and minimum spanning tree algorithms (Prim’s and Kruskal’s).
3. Understand time and space analysis of both iterative and recursive algorithms (asymptotic notation and recurrence relations) and be able to prove the correctness of a non-trivial algorithm.
4. Be able to translate high-level, abstract data structure descriptions into concrete code.
5. Understand how real-world problems map to abstract graph problems.
6. Be able to communicate clearly and precisely about the correctness and analysis of basic algorithms (both oral and written communication).
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TOPICS
1. Time and Space Analysis (Asymptotic Notation)
2. Recursion and Recurrence Relations
3. Review of Basic Data Structures (Lists, Stacks, Queues)
4. Tree-Based Data Structure, including Heaps, BSTs, Union/Find Data Structures, AVL Trees
5. Hashing
6. Data Structures for Storing Graphs, Elementary Graph Algorithms (BFS, DFS), and their Applications
7. Algorithms for Solving Minimum Spanning Tree Problem (Prim’s and Kruskal’s) and their Implementations

ADA STATEMENT
The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with an accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information, see the Office of Disability Accommodation website at http://disability.unt.edu. You may also contact them by phone at (940) 565-4323.

ACCEPTABLE STUDENT BEHAVIOR
Student behavior that interferes with an instructor’s ability to conduct a class or other students’ opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student’s conduct violated the Code of Student Conduct. The university’s expectations for student conduct apply to all instructional forums, including university and electronic classroom, labs, discussion groups, field trips, etc. The Code of Student Conduct can be found at http://deanofstudents.unt.edu.

ACCESS TO INFORMATION – EAGLE CONNECT
Your access point for business and academic services at UNT occurs http://www.my.unt.edu. All official communication from the university will be delivered to your Eagle Connect account. For more information, please visit the website that explains Eagle Connect and how to forward your e-mail: http://eagleconnect.unt.edu.
SUCCEED AT UNT
UNT endeavors to offer you a high-quality education and to provide a supportive environment to help you learn and grow. And as a faculty member, I am committed to helping you be successful as a student. Here’s how to succeed at UNT: (1) show up; (2) find support; (3) get advised; (4) be prepared; (5) get involved; and (6) stay focused.

EMERGENCY NOTIFICATION & PROCEDURES
UNT uses a system called Eagle Alert to quickly notify you with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). The system sends voice messages (and text messages upon permission) to the phones of all active faculty, staff, and students. Please make certain to update your phone numbers at http://www.my.unt.edu. Some helpful emergency preparedness actions include: (1) know the evacuation routes and severe weather shelter areas in the buildings where your classes are held; (2) determine how you will contact family and friends if phones are temporarily unavailable; and (3) identify where you will go if you need to evacuate the Denton area suddenly. In the event of a university closure, please refer to Blackboard for contingency plans for covering course materials.

ACADEMIC DISHONESTY
Students caught cheating or plagiarizing will receive a “0” for that particular assignment or exam. Additionally, the incident will be reported to the Dean of Students, who may impose further penalty. According to the UNT catalog, the term “cheating” includes, but is not limited to: (a) use of any unauthorized assistance in taking quizzes, tests, or examinations; (b) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; (c) the acquisition, without permission, of tests of other academic material belonging to a faculty or staff member of the university; (d) dual submission of a paper or project, or resubmission of a paper or project to a different class without express permission from the instructor(s); or (e) any other act designed to give a student an unfair advantage. The term “plagiarism” includes, but is not limited to: (a) the knowing or negligent use by paraphrase or direct quotation of the published or unpublished work of another person without full and clear acknowledgement; and (b) the knowing or negligent unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.

Individual programming assignments in this course must be the sole work of the individual student. You should not work with other students on shared program solutions or use program solutions found on the Internet. Specifically, you should never copy someone else’s solution or code, and never let a classmate examine your code. If you are having trouble with an assignment, please consult with your instructor.

The use of cell phones, including text messaging, will not be permitted during quizzes or exams. Any use of cell phones during this time will be considered a violation of the university’s policy on academic honesty and will be treated accordingly.
ATTENDANCE POLICY

Class attendance is regarded as an obligation as well as a privilege. All students are therefore expected to attend each class meeting. *A student who misses class is still responsible to find out what was discussed and to learn the material that was covered and obtain the homework that was assigned on the missed day.* The instructor is not responsible for re-teaching material missed by a student who did not attend class. Therefore, each student is accountable for and will be evaluated on all material covered in this course, regardless of attendance.

Excessive unexcused absences may result in your class grade being lowered and can even lead to being dropped from the course. If you miss class for what you believe to be a valid reason, you must submit a written excuse within two days of your return. Excused absences typically consist of, but are not limited to: (1) illness with a physician’s note; (2) university sanctioned event; and (3) documented family emergency, such as a death in your immediate family. The instructor will have the final say as to whether or not an absence is excused.

If you anticipate being absent from a class, please notify your instructor in advance to see if there is any course material or other important information you might need prior to your absence. A student who is tardy for a class meeting should resolve the matter with the instructor at the end of the class period during which the tardiness occurred. Otherwise, the instructor may treat the tardiness as an absence. Since this class meets on a MoWe schedule, students with more than four (4) unexcused absences may be dropped from the course or have their grade lowered by one letter grade at the discretion of the instructor. Therefore, I expect your participation and attendance in this class to receive high priority.

RETENTION OF STUDENT RECORDS

Student records pertaining to this course are maintained in a secure location by the instructor of record. All records such as exams, answer sheets (with keys) and written papers submitted during the duration of the course are kept for at least one calendar year after course completion. Course work completed via the Blackboard online system, including grading information and comments, is also stored in a safe electronic environment for one year. You have a right to view your individual record; however, information about your records will not be divulged to other individuals without the proper written consent. You are encouraged to review the Public Information Policy and the Family Educational Rights and Privacy Act (FERPA) laws and the university’s policy in accordance with those mandates at the following link: [http://essc.unt.edu/registrar/ferpa.html](http://essc.unt.edu/registrar/ferpa.html).

STUDENT EVALUATION OF TEACHING (SETE)

Student feedback is important and an essential part of participation in this course. The Student Evaluation of Teaching (SETE) is a requirement for all organized classes at UNT. This short survey will be made available at the end of the semester to provide you with an opportunity to evaluate how this course is taught.
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GRADING POLICY

Your course grade will be a weighted average according to the following:

- Attendance/Participation: 6.0%
- Homework: 20.0%
- Programming Assignments: 24.0%
- Midterm 1: 15.0%
- Midterm 2: 15.0%
- Comprehensive Final Exam: 20.0%
- Total: 100.0%

Your letter grade for the semester will be determined as follows:

- A = 90 – 100
- B = 80 – 89
- C = 70 – 79
- D = 60 – 69
- F = 0 – 59

Grades will be posted on Blackboard throughout the semester to provide an ongoing assessment of student progress, though final assessment will be measured using the weighted average above.

**Attendance/Participation:** Attendance/Participation grades will be based on attendance, contribution to in-class discussions, and assessment of any in-class work. Disruptive behavior and unexcused absences deemed excessive will result in a lower attendance/participation grade.

**Homework:** Homework will be assigned based on material from the lectures and textbook. These assignments are meant for you to become familiar with the course material and this practice will aid you in mastering the concepts on the programming assignments and exams. No late homework will be accepted, so please make sure that you complete and submit all homework assignments on time.

**Programming Assignments:** There will be three programming assignments assigned during the semester. Programming assignments will be completed outside of class, though some in-class time may be dedicated to answering questions about or working on the programming assignments. Programming assignments will be accepted up to 24 hours late and be assessed a 30% grade reduction penalty. Programming assignments submitted more than 24 hours late will not be accepted and receive a grade of “0”. Partial credit will be given for programs that compile, but are not complete. Starting early on programming assignments is strongly encouraged as students typically have great difficulty in completing their programming assignments in one night the day before they are due. Instructions for submitting programming assignments will be made available for each project.

**Midterm Exams:** There will be two midterm examinations given in this course. The dates of these exams will be posted on Blackboard and announced in class at least one week prior to the date of the exams. A make-up exam will be given at the discretion of the instructor when a student misses an exam with an excused absence. Unexcused absences on the date of an exam may result in a grade of “0” for the missed exam, so every effort should be made to attend class on the day of a scheduled exam.

**Final Exam:** There will be a comprehensive final exam on Monday, December 8, 2014, from 2:00 PM to 4:00 PM. All students are expected to take the final exam during the scheduled time period.
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TENTATIVE CLASS SCHEDULE (*subject to change*):

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Material Covered</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>1</td>
<td>8/25 – 8/29</td>
<td>Intro, Chapter 1</td>
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<tr>
<td>2</td>
<td>9/1 – 9/5</td>
<td>Chapters 1 &amp; 2</td>
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<tr>
<td>3</td>
<td>9/8 – 9/12</td>
<td>Chapter 2</td>
<td>HW1</td>
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<tr>
<td>4</td>
<td>9/15 – 9/19</td>
<td>Chapter 3</td>
<td>HW 2</td>
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<tr>
<td>5</td>
<td>9/22 – 9/26</td>
<td>Chapter 3, Review</td>
<td>Exam 1</td>
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<tr>
<td>6</td>
<td>9/29 – 10/3</td>
<td>Chapter 4</td>
<td>Prog 1</td>
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<td>10/6 – 10/10</td>
<td>Chapters 4 &amp; 5</td>
<td>HW 3</td>
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<td>10/13 – 10/17</td>
<td>Chapter 5</td>
<td>HW 4</td>
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<td>10/20 – 10/24</td>
<td>Chapter 6</td>
<td>HW 5</td>
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<tr>
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<td>10/27 – 10/31</td>
<td>Chapter 6, Review</td>
<td>Exam 2</td>
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<td>11/3 – 11/7</td>
<td>Chapter 7</td>
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<td>Chapters 7 &amp; 8</td>
<td>HW 6</td>
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<td>11/17 – 11/21</td>
<td>Chapters 8 &amp; 9</td>
<td>HW 7</td>
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<td>12/1 – 12/5</td>
<td>TBD, Review</td>
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<tr>
<td>16</td>
<td>12/8 Mon</td>
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2:00 – 4:00