CS1382 Discrete Computational Structures

Final Exam Review

Spring 2019

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Assessment Method

- No make-up exams
- Homework - 15 %
- Quizzes - 5 %
  - Quiz may NOT be announced in advance
  - NO makeup for the quiz
- Exams
  - Midterm Exam I - 25 %
  - Midterm Exam II - 25 %
  - **Final Exam (May 14th, 7:30pm – 10pm) - 30 %**
  - *Any calculators allowed*
  - *No phones and no extra materials allowed.*

Final Exam Topics (Lecture 12 – 15)

1. **Counting (Chapter 06)**

    1. **Basic Counting Principles:**
       Product Rule, Sum Rule, The Subtraction Rule, Permutations and Combinations, Binomial Coefficients and Identities, Generalized Permutations and Combinations

2. **Discrete Probabilities (Chapter 07)**

    1. **Finite Probability:** Probability of an Event, Laplace Definition, Uniform Distribution, Probabilities of Complements and Unions of Events

    2. **Probability Theory:** Assigning Probabilities, Probabilities of Complements and Unions of Events, Conditional Probabilities, Independence

    3. **Bayes' Theorem:** Bayes' Theorem, Application of Bayes' Theorem

Final Exam Topics (Lecture 12 – 15)

3. **Graphs (Chapter 10)**

    1. **Graphs and Graph Models:**
       Graph, Simple Graph, Multigraph, Pseudograph, Directed Graph, Undirected Graph
       Social, Acquaintanceship, Influence and Call Graph

    2. **Graph Terminology and Special Types of Graphs**
       Adjacent (Neighbors), Incident, Neighborhood of v, Degree of vertices, Handshaking Theorem,
       Complete Graph, Cycles and Wheels, Bipartite Graphs, Subgraph and Union of Graphs

    3. **Representing Graphs and Graph Isomorphism**
       Adjacency Lists, Adjacency Matrices, Incidence Matrices, Isomorphism, Connectivity and
       Shortest Path Algorithm

Final Exam Topics (Lecture 12 – 15)

4. **Trees (Chapter 11)**

    1. **Trees:**

        Trees, Forest, Trees as Models, Rooted Tree, Rooted Tree Terminology, m-ary Rooted Tree, Properties of Trees, Tree Traversals, Spanning Trees, Kruskal's Algorithm, Prim's Algorithm

Questions?

Thank You!