TCSS 322 Master Syllabus
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Catalog Description

Covers advanced topics in discrete mathematics useful for computing professionals, including basic counting techniques, discrete probability, recurrence relations, graphs, trees, and models of computation such as finite state machines and Turing machines. Prerequisite: a minimum grade of 2.0 in TCSS 321.

Preconditions

- Recognize and use mathematical formalisms (e.g., sets, logic, summations, proof).
- Translate problem descriptions into mathematical formalisms.
- Manipulate (procedural knowledge) and apply mathematical formalisms to solve problems.

Student Learning Outcomes (to be added to syllabus handed out to students)

- Use basic counting techniques to determine the size of a problem space.
- Use recurrence relations to determine the size of a problem space.
- Represent a range of computer science problems using graph and tree models.
- Formulate state machines to solve basic computational problems.

CSS Degree Student Learning Outcomes that this course contributes to (to be added to syllabus handed out to students)

a. an ability to apply knowledge of computing and mathematics appropriate to the discipline.

UWT Student Learning Goals that this course contributes to (to be added to syllabus handed out to students)

Inquiry and Critical Thinking
Students will acquire skills and familiarity with modes of inquiry and examination from diverse disciplinary perspectives, enabling them to access, interpret, analyze, quantitatively reason, and synthesize information critically.

Topics covered

- Basic Counting Techniques
- Discrete Probability
- Recurrence Relations
- Graphs
- Trees
- Models of Computation