

CPSC 513 — Fall, 2024

Information about the Midterm Test

Time Written

The midterm test will be written from 6:00 pm until 7:30 pm on Wednesday, October 23 in MS 527.

Topics Covered

Material covered will include everything up to and including Lecture #13 — that is, everything up to the end of the lecture in which the existence of a computable total function, which is not a primitive recursive function, is established.

You should be prepared to do the following.

- Provide definitions of important technical terms that have been defined in class, along with statements of significant technical results, and to explain the meaning and application of these.
- Show that you can prove that a given function is ***primitive recursive***.
- Show that you can prove that a given (partial or total) function is ***computable***.
- Show that you understand the relationship between ***computations on $\mathbb{N}$*** and ***computations on strings***.
- Demonstrate your understanding of various significant concepts about ***universal computation***.
- Answer questions about ***computable*** and ***computably enumerable sets***, and solve various kinds of problems that involve them.
- Use ***many-one reductions*** to show that various sets are *not* computable — or recursively enumerable.

Aids Allowed

Students may bring a double-sided, letter-sized page of notes and refer to this when writing the test. No other aids are allowed.