

## Learning Outcomes – 2023

\*\* COMP 151

At the end of the course, students







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Learning Algorithm design techniques: divide-and-conquer, dynamic programming, greedy algorithms, amortized analysis, randomization.

Implement the Algorithms for fundamental graph problems such as graph traversal, connected components and topological sort.

Apply algorithmic principles to provide a computing-based solution that meets a given set of requirements such as making decisions based on time-space complexity trade-off of algorithms and the characteristics of input data.

Demonstrate their mastery of the concepts by implementing them through programming.

Understand the ethical implications of algorithms and the possible unintended consequences of designing and/or choosing and using algorithms in the different applications.

### \*\* 490 (Senior Design and Development)

Satisfactorily programs part of an existing large project

Accurately describes the merits and possible unintended consequences of a computational system, service or proposal

Identifies disruptive effects of latest computing advancements on individuals, organizations, and society

Can articulate differences/tradeoffs of multiple designs

Works together as part of a team.

Builds a significant project using 3rd party library with little formal instruction on those libraries

Demonstrates use of state-of-the-practice (or state-of-the-art) development techniques including automated testing for 1 & 6 above

Can work effectively with data and data stores.