

# Lesson Plan

## 1. Introduction

- Purpose of class
- Structure
- Intro to C++
- **Small C++ assignment**

## 2. Basic C++

- Pointers and reference
- Memory management

## 3. More C++

- Classes
- Big 3
- Templates
- **Assignment**

## 4. Math review

- Big O notation
- Induction
- Recursion
- **Selected math problems**

## 5. Stacks and Queue

- Purpose
- Implementation
- Runtime
- Usage
- Implement

## 6. Single Linked Lists

## 7. Double Linked Lists

- **Merge sort!**

## 8. Binary Sort Tree

## 9. AVL tree

## 10. B-tree

## 11. Heaps

## 12. Hashes