# ITCP 1

## Intro to Competitive Programming

**Prerequisite:** None    **Reccomended:** Prior coding experinece, familariarity with various mathematical concepts

**Textbook:** Introducttion to Competitive Programming *Antti Laakonsen*

**Course Description:** Examines fundamental Computer Science concepts such as libraries, variables, arrays, input/output verification, and methods using C++ and develops the techniques and theory to solve Competitive Programming problems. Solution techniques include Prefix Sum, Binary Search, and Simulation. Investigates the properties of Time Complexity and how to develop efficient and creative solutions.

**Supplemental Assignments:** There will be 2 supplemetal assignments assigned for each week of instruction resulting in a total of 12 supplemental assignments. These assignments will be additional problems to solve in the Code – E class.

**In – Class Assignments:** Each class session you will have 1 hour to complete 2 in – class assignments. These assignments will be problems also posted in the Code – E class online.

**Lectures:** Every Tuesday from 5pm to 6pm I will lecture on a topic for that day. You will be given 1 hour after lecture to complete the in – class assignments.

**Final Competition:** For the final week we will host a competition among the class. Awards will be given to the top 3 who place. Awards will also be announced for most assignments completed and perfect attendance.

**Attendance and Behavior:** Attendance is completely voluntary along with solving the assigned assignments however required if you desire to be rewarded at the end of the course. Appropriated behavior and online courtesy is expected in Discord calls with everyone's mic muted. Of course, you may unmute at any time to ask a question.

**Academic Honesty:** Cheating will not be tolerated and will result in a zero on the graded item and any qualifications for final awards will be void.

**Student Learning Outcomes:** Upon successful completion of the course, students should be able to:
- Understand the fundamentals of C++
- Solve introductory Competitive Programming problems
- Understand the fundamentals of Time Complexity

**Some Important Dates:**
Start Date:
End  Date:
Final Due Date for All Assignments:

**Tentative Schedule:**

| Week Of | Monday |
|---|---|
| 1 | Libraries, Variables, Input/Output, Loops, and Conditional Statements |
| 2 | Arrays and Methods |
| 3 | Simulation and Time Complexity |
| 4 | Prefix Sum |
| 5 | Binary Search |
| 6 | Final Contest |