

# CSC 230

## Computer Science II : Data Structures

**Time: Tuesday. & Friday. 9:30am – 10:50am**

**Tuesday: 11:00am – 12:20pm**

**Location: Forcina 407 & 406 (lab)**

**Office Hours:**

**Tuesday: 3:30pm – 5:00pm**

**Wednesday: 9:00am – 10:30am**



# Who am I ?

- ◆ Ying Mao
- ◆ Assistant Professor of CS Department
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- ◆ Phone: 609-771-2789

# What will be covered?

## What you are expected to learn?

- Data Structures: methods to store information
- Algorithms: methods to solving a problem
- C++ : primary language
- Java : secondary language

topic	Data structures and algorithms
Data type	Stack, queue, list, priority queue
Sorting	Selection sort, insertion sort, bubble sort, quick sort, merge sort
Searching	Linear search, binary search, BST, AVL tree, red-black BST
Trees	Traversal, 2-3 Trees, 2-4 Trees, B-trees

# Why study data structures and algorithms ?

Let's play a Guessing Number game.

# Why this course?

## What makes a good program?

- The right data structure and the efficient algorithm make a good program
  - BS in Computer Science. MS Preferred.
  - Strong CS fundamentals including data structures, algorithms and distributed systems.
  - Strong database fundamentals including SQL, performance and schema design.
  - Strong programming skills in Java, C++, Python, Ruby or similar.

**Microsoft**

**facebook**

**LinkedIn**

**Google**

**IBM**

**Hortonworks**

# Course Objective

## At the end of this course

- Data Structures (Classic structures and techniques)
- Algorithms (Classic algorithms and basic analysis)
- Programming (**Independent** programmer)



# Need help?

## At any time

- Email me at [maoy@tcnj.edu](mailto:maoy@tcnj.edu)

## During working hours

- Come to the office hours in Forcina 460
- Walk in whenever the door is open
- Make an appointment through email

# Course Materials

## Textbook

- Textbook (reading and examples)
  - **Programming in C++ and Data Structures**, <http://zybooks.zyante.com>
    1. Sign up at zyBooks.com
    2. Enter zyBook code **TCNJCSC230MaoSpring2017**
    3. Click Subscribe
- Online materials
  - All the lecture notes will be post on CANVAS



# Work Load

**Heavy ! Heavy !! Heavy !!!**

**Always start early and keep Thinking !!!**

- Approx. 50 pages of reading per week
- 12 or more labs
- Reading assignments
- 4 or 5 programming projects
- 1 midterm exam
- 1 final exam



# Grading Policy

CSC 230 Grading Policy	
Projects	20%
Midterm	25%
Final	25%
Labs	25%
Reading and testing examples	5%

# Grading Policy

CSC 230 Grading Policy	
A	>92
A-	89-92
B+	86-89
B	83-86
B-	80-83
C+	77-80
C	74-77
C-	70-74

# Project / Lab grading

**100 points for each project / lab**

- Project late policy
  - One day: 90%, two days: 70%, Three days: 40%, Four days: 20%, Five days: 0% of earned points.
- Lab late policy
  - 0% for late submission
  - Submit to CANVAS
  - Individual work, no code sharing allowed

# Academic Honesty

## Do not COPY and PASTE

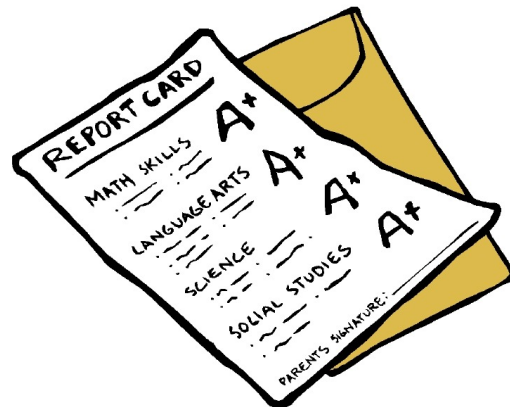
- If you have difficulty, ask me/classmate for help! Do NOT copy!
- You will get 0 on the particular assignment/exam for the first attempt, you will fail the course on the second attempt
- Group study/discussion is encouraged, but you must write down the solution by yourself



# What are you expected to do?

## Get an A in CSC 230

- Participate discussion, ask and answer questions
- Give me suggestions: I'll take them seriously
- Do the assigned readings and occasionally surf the web to read related things
- Start early on assignments and projects



# The truth is...

## Learning should be fun and easy

- I'll try my best to make it fun and close to the market
  - We will discuss interview-like questions sometimes
- However, you should work very hard to practice
- I do not know all the answers: we'll work together to find them
- I need your constant feedback and suggestions, I will take them seriously



# Announcement

No class on Jan 27 due to attending the conference.

Reading assignment will be post on Canvas