

# CSIE1212: Data Structures and Algorithms

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Course Introduction, February 17, 2014

# Three Warnings Before (Signing for) the Course (1/3)

## 警告: High Expectations

- goal of NTU DSA class:  
as good as the best ones in the world
- tentatively, 6–7 homework sets, midterm exam, final project  
(<http://www.csie.ntu.edu.tw/~htlin/course/dsa14spring>)
- will have **HW1 next week**
- writing assignments and **time-consuming** programming assignments

be prepared to **work hard!**

## Three Warnings Before (Signing for) the Course (2/3)

### 警告: Strict Instructor

- Will you give me a second chance if I copy homework from other people? **No**.
- Could you let me pass because I will be kicked out by the 1/2 rule? **No**.
- Will you change my score from *F* to *C*? **No**.

be prepared to **follow the rules!**

# Three Warnings Before (Signing for) the Course (3/3)

## 警告: Uncertain Outcome

- fourth-time teaching this course, second-time teaching **two classes**
- ambitious and willing to **experiment**  
—**mixed-English teaching** and **1.5-hour classes**, for instance
- How many people will not pass?  
**I don't know yet.**
- Will your investment (time) get good return (knowledge)?  
**No guarantees, but I'll try my best.**

be prepared to **take some risks!**

給資訊系的同學們：努力加油  
給想加選的同學們：審慎考慮

# Some Historical Notes

*Once upon a time, when I was a freshman in NTU CSIE (1997).....*

- 「計程」有兩學期，上學期教C，下學期教C++
- 大二上學期教「資料結構」
- 大二下學期教「演算法」

*Then, in my senior year (2001).....*

- 「計程」變成一學期，大一下學期教「物件導向程式設計」(Java)
- 大二上學期教「資料結構與演算法上」
- 大二下學期教「資料結構與演算法下」

*Then, starting 2010.....*

- 物件導向程式設計變為選修
- 大一下學期教「資料結構與演算法」
- 大二上學期教「演算法設計與分析」

- 兩學期的「計程」變成一學期、「物件導向程式設計」變成選修：相信同學們可以有自己學習不同語言的能力。
- 把「資料結構」及「演算法」合成一門課：兩者互相依賴，其實不容易分散來教。
- 把「資料結構與演算法上/下」區分成「資料結構與演算法」和「演算法設計與分析」：  
強調前者以實作為主，銜接計程做更深入的程式練習；後者以分析為主，建立在前者的基礎上探討更多不同的演算法。

# Basic Information

- instructor:  
林軒田 Hsuan-Tien Lin ([htlin@csie.ntu.edu.tw](mailto:htlin@csie.ntu.edu.tw))
- office hour: after class or by appointment
- course webpage, mailing list:  
<http://ceiba.ntu.edu.tw/1022dsa> (CEIBA)
- course contents actually in  
[www.csie.ntu.edu.tw/~htlin/course/dsa14spring](http://www.csie.ntu.edu.tw/~htlin/course/dsa14spring)
- two classes teach essentially the same material
  - first class (two slots of about 1.5 hours): Monday 09:10–10:30;  
Tuesday 13:20–14:40  
—fresh jokes
  - second class (two slots of about 1.5 hours): Monday 11:20–12:40;  
Tuesday 15:30–16:50  
—more distilled materials

**Update your secondary email address on CEIBA!**



# Instructor: Strict but Friendly

- Will you repeat the previous code/slide again? **Yes**.
- Will you discuss with me after class if I don't understand? **Yes**.
- Will you pardon my silly questions? There are **no** silly questions.

**Feel free to ask me questions and give me feedback!**

- 106 seats in room 104, thus the limit
- **type-3**: just go test your luck
- auditing: welcomed (to sit) only if there is an empty chair

**please think before you choose to enroll**

# Teaching Assistants

- TAs (tentatively): 何君彥、楊涵傑、尤聖榮、林奕安、吳宇平、張振豪、侯信丞、游書泓、章莉、李穆竺、宋彥頡、樂正、王瀚中
- TA email: `dsa@csie.ntu.edu.tw`  
—13 TAs and 1 instructor around, usually faster than sending to individual
- office hours: to be announced

**very friendly TAs; ask them more questions!**

# THE Principle

Taking any unfair advantages over other class members is not allowed. It is everyone's responsibility to maximize the level of fairness.

- eating? fine, but no smells and no noise
- sleeping? fine, but no snoring
- cellphone? fine, but silent mode, and speak outside
- ...

**applies to instructor, TAs, students**

**NO CHEATING**

**NO LYING**

**NO PLAGIARISM**

**very very very very serious consequences**

- homework (best \* 1.5 + worst \* 0.5 + others), midterm, final
- supplementary reference: participation in discussions
- raw score goes through some order-preserving normalization steps
  - raw score 80 with term rank A: possible
  - raw score 80 with term rank B: possible
  - raw score 60 with term rank F: possible
  - raw scores 80, 60 with term scores B, B: possible, but unlikely
  - raw scores 80, 60 with term scores F, B: **impossible**

from the principle: **no individual score change**

# Collaboration and Open-Book

- homework discussions: encouraged
- but fairness?  
**write the final solutions alone and understand them fully**
- references (books, notes, Internet):  
consulted, but **not copied from**
- no need to lend/borrow solutions

to maximize fairness (everyone's responsibility),  
**lending/borrowing/buying/selling not allowed**

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Deal? If your classmate wants to borrow homework from you,  
what do you say?



# Homework

- students: justify solutions clearly
- TAs: evaluate solutions fairly
- no individual extension unless not violating the principle (e.g. institute-established cases of illness or emergency)
- late penalty:  
90% of the value for 12-hour late, 80% of value for 24-hour late, ...

**four penalty-free late half-days (金牌) per person**

Data Structures and Algorithms in C++, 2nd Edition by  
Goodrich, Tamassia and Mount.

- please get it as early as possible
- will try to teach a lot from it

**learning to read a textbook** is part of the course

# Getting the Book to Read

- NTU Library: reserved copy in the shared course material area
- R536: will put some shared copies to be read in the room
- **If the book is not affordable to you: email me**  
**([htlin@csie.ntu.edu.tw](mailto:htlin@csie.ntu.edu.tw)) and I'll see how I can help.**

# Reading Assignments

- weekly
- sections related to what we teach, or sections that are worth reading by yourself
  - we cannot teach all, but with reading you can learn all
- 3-6: 3 hour teaching, 6 hour reading/writing after class

as important as writing assignments:

**some may show up in exams**

- Mandarin: main language
- English: often encountered
  - teaching ( $> 1/3$ ), coding, website, assignments, . . .
  - important for your future and you are recommended to practice

**don't be afraid of English**

# How to Pass the Class?

- catch up from day 1
- ask questions!
- have fun writing programs
- understand writing proof

# Important TODOs

- Update your secondary email address on CEIBA
- Read the policy thoroughly

**Enjoy the Class! Questions?**