

# Final Words

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# Before the Midterm

- Basics of DSA: data structure, algorithm, complexity
- Arrays: dense, sparse, polynomial, matrix
- Strings: pattern matching
- Stacks: expression parsing, mazing
- Queues: shortest mazing
- Linked Lists: singly, circular, doubly, sparse matrix

# After the Midterm

- Trees: general, binary, traversal, threaded, heap, BST, selection
- Sorting: bubble, selection, insertion, shell, merge, heap [tournament], quick [BST], counting, radix
- Hashing: chaining, probing, dynamic
- Advanced BST: AVL
- Priority Queues: binomial heap

### 很好: Hard Working Students

- challenging homework/class, but **many of you work hard**
- very good homework performance, **beyond expectation!**

很好: Super TAs

- many homework problems—**very difficult to grade**
- TAs: enthusiastic and worked **lots more than needed**

### 很好: Active Instructor

- high pressure to teach two classes of new contents at the same time  
—**especially when students don't laugh when hearing jokes**
- instructor still active and **very persistent in telling jokes**

### 不好: Unsuitable Textbook

- wanted a textbook that encourages reading assignments  
—**opposite effect when textbook is not clear enough**
- advice: **keep being brave when reading other references in the future**

### 不好: Plagiarism Cases

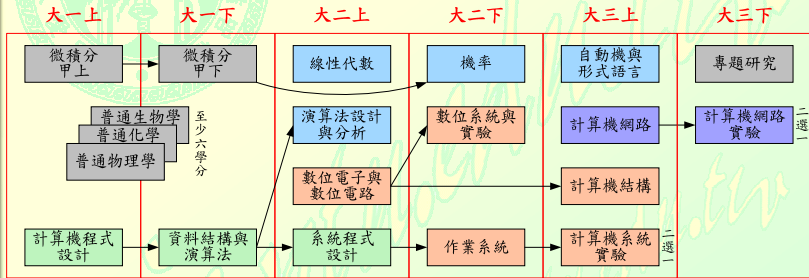
- **very sad to see those happening**
- **advice: never let them happen again in your future classes**

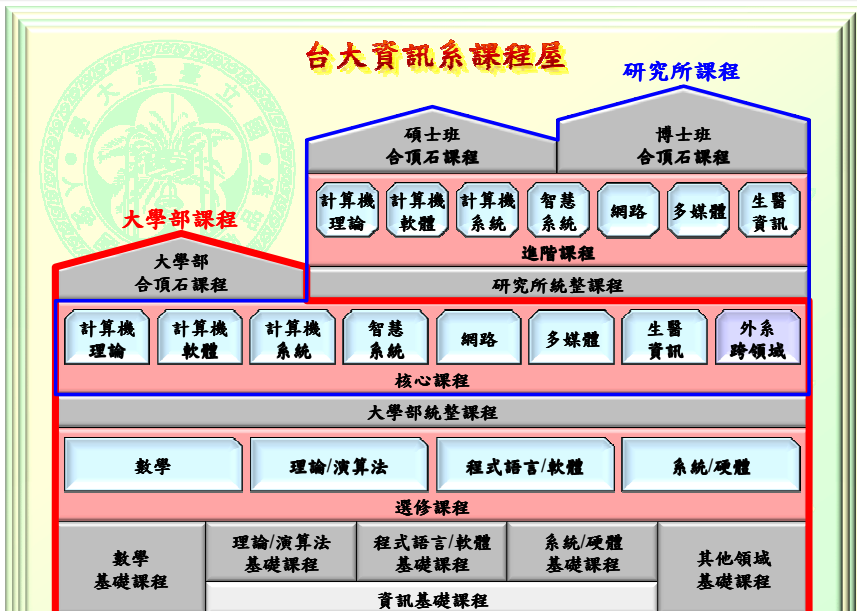


### 不好: Low TA Hour Usage

- **gap between homework and classroom teaching, and one reason for slow teaching**
- **advice: use the resources (instructor, TA, book, internet, etc.) more actively in your future classes**

## 系定必修課程流程圖





## How to Be an Excellent Programmer?

| ability / characteristic  | related courses  |
|---|--|
| sincere, communication, work hard, ...  |  |
| domain knowledge  |  |
| language feature <ul style="list-style-type: none"><li>• workable program</li><li>• bug-free program<br/>e.g., C# property, DateTime.Now</li><li>• most suitable feature<br/>e.g., if vs. switch statements</li></ul> | Programming Language (Compiler)<br>(Operating System)<br>(Computer Architecture) |
| program behavior  | Data Structure<br>Algorithm  |
| API, library <ul style="list-style-type: none"><li>• simple API<br/>e.g., Date, Calendar, GregorianCalendar</li><li>• complex API, with design concept<br/>e.g., swing's event/listener, RMI</li></ul>                |  |
| experience <ul style="list-style-type: none"><li>• write program by yourself</li><li>• trace other's real &amp; good program</li></ul>  | (Data Structure)<br>(Algorithm)  |

# Most Important of All: Never Stop Learning!

<http://www.books.com.tw/exep/prod/booksfile.php?item=0010464414>

獻給還在大學裡的編年編年們，尤其是今晚想幹 IT 這一行的人  
一群 IT 小小鳥，來自不同的院校、不同的系、不同的班、不同的年、不同的生、不同的女  
在大學中追求夢想，在迷途中尋找方向

祝願現實的編年編年們  
本科不畢業，考研少些日子，實習別耽誤，並願心中有數  
畢業不尋找工作，自己給自己創業

*I am a tiny bird*



我是一隻  
IT 小小鳥



浙江大學 姜 勇 學編 編譯

THANK YOU!!