Introduction To Computer Science

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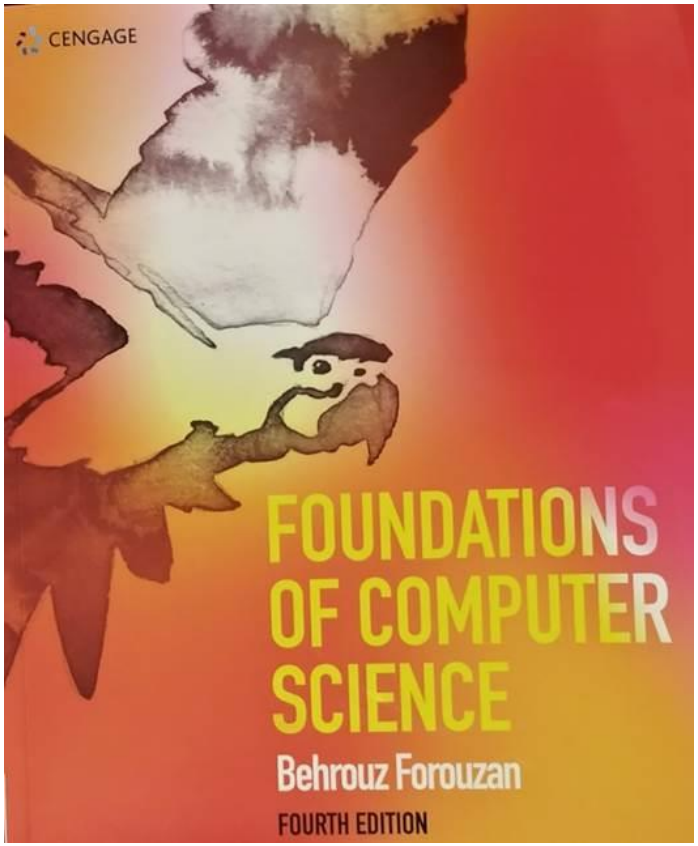
Course Description

This course presents an introductory survey of computer science. It follows a bottom-up arrangement of subjects that progresses from the concrete to the abstract and makes all the applications for information technologies. These covered topics are as follows. Introduction to computer science, Number systems, Data encoding and storage, Computer architecture, Networking and protocol, Operating systems, Algorithms, Programming languages, Software engineering, Data structure, Abstract data types, File structures, Databases, Data compression, Information security, and Artificial Intelligence.

Textbook

Foundations of Computer Science



Fourth Edition, 2018

By Behrouz A. Forouzan

Course Time and Office Hours

- **Course Time & Place:**
  - **13:10 ~ 16:00, Tuesday, C211**
- **Office Hours & Place:**
  - **13:10 ~ 15:00, Monday, C309**
  - **14:10 ~ 16:00, Thursday, C309**

Prepare your materials

- Concentration and Passion
- Textbook or

  Make classnote
- Install Quiz_SendAnswerByGmail.apk

  (Android OS)
- Propose your questions anytime
- Quiz at last 15 minutes after each 3-period teaching (open book)

Grading

- **Attendance: -5 % ~ 5 %**
- **Homework: 35 %**
- **Midterm Test: 30 %**
- **Final Test: 35 %**

Attendance -5~5 %

- **Roll-call each class**
  -0.5 each since 2nd arrival late
- **Signature each class**
  -1 for 1st absence, -2 each for 2nd and 3rd absences, -1 each since 4th absence

Exception:

- **Final test will be rejected if the number of absences is up to six because your learning has not been recognized to complete this course.**

Homework 35 %

- **Quizzes:** Grading for sum of righted answers in total problems
- **Paper-based** assignments: Grading for sum of righted answers in total problems
- **Or Video-based** assignments
- **Deliver your paper-based (or video) assignments on time:** The score will be reduced due to overdue
- **Don't cheat for your any homeworks**

  The score would be **zero** once one is verified

Mid-term Test 30 %
Final Test 35 %

- **4-page Problems:** Closed book and 100 points are maximally graded from **110~125-point** problems
- **Don't cheat in any tests**

  The score would be **zero** once one is verified.
- **Open for all the gradings** (You can check your scores about homework and tests anytime)
- **No 58~59.9 points in term score**

Teaching Web

http://www.nhu.edu.tw/~chun

English-Version 首頁(CC_Tsai) 簡介(Biography) 教學課程(Teaching Courses) 教學績效(Teaching Awards) 輔導績效(Counseling Awards) 成績公佈(Grade Report)
研究(Research) 著作(Publication) 學術服務(Academic Service) 行政服務(Admin. Service) 社會服務(Social Service) 校務諮詢委員建言(Advisory Service)
傑出經驗分享(Distinguished Sharing) 感言(Impression) 領悟人生(Life Review) 永懷國小恩師趙錦堂/僑平國小56級六丙同學會 HotLinks

Monday, August 12, 2019

蔡加春(Chia-Chun Tsai) E-mail:chun@nhu.edu.tworchun@mail.nhu.edu.tw Since June 1998

蘭潭, Chiayi

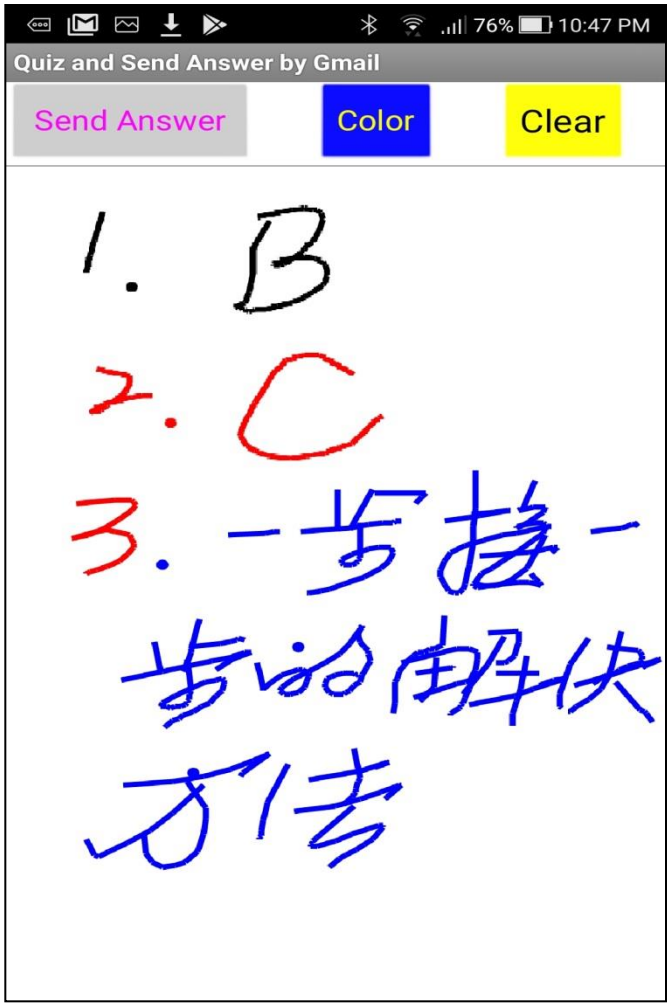
Hokkaido, Japan, July 2019

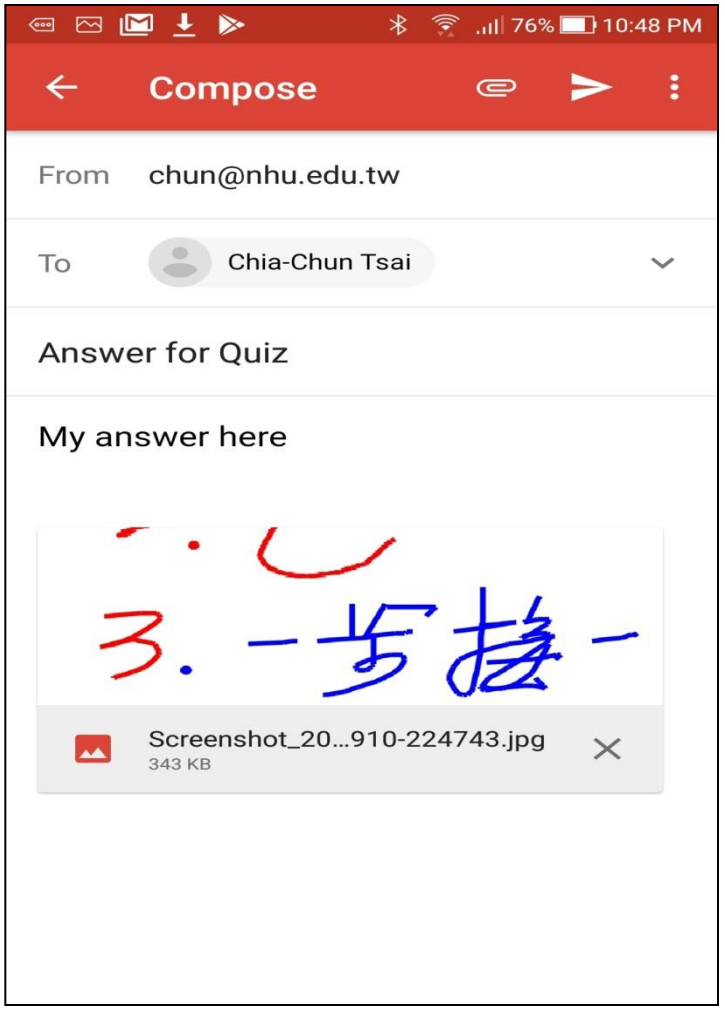
Puerto Vallarta, Mexico, Feb 2018

Video-based Web: http://qnew.nhu.edu.tw

Quiz_SendAnswerByGmail.apk

App for Quiz





Contents for Introduction To Computer Science

Ch1. Introduction

- Turing model, Von Neumann model, Computer components, History.

Ch1. Introduction-Extension

- Moore's Law, nano-meter process.

Ch2. Number Systems

- Binary, Octal, Decimal, and Hexadecimal systems.

Ch3. Data Storage

- Data types, Storing numbers, Storing text, Storing audio, Storing images, and Storing video.

Ch4. Operations on Data

- Logic operations, Shift operations, and Arithmetic operations.

Contents for Introduction to Computer Science

Ch5. Computer Organization

- Central processing unit, Main memory, I/O subsystem, Subsystem interconnection, Program execution, Different architectures, and A simple computer.

Ch6. Computer Networks and Internet

- Introduction, TCP/IP protocol suite, Layers, and Internet applications.

Ch7. Operating Systems

- Introduction, Evolution, Computers, and survey of operating systems.

Midterm Test

Contents for Introduction To Computer Science

Ch8. Algorithms

- Concept, Algorithm representation, A formal definition, Basic algorithms, Sub-algorithms, and Recursion.

Ch9. Programming Languages

- Evolution, Translation, Programming paradigms, and Common concepts.

Ch11. Data Structure

- Arrays, Records, and Linked lists.

Ch12. Abstract Data Types

- Stacks, Queues, General linear lists, Trees, Binary trees, Binary search trees, and Graphs.

Contents for Introduction To Computer Science

Ch13. File Structure

- Access methods, Sequential files, Indexed files, Hashed files, Directories, and Text versus binary.

Ch14. Databases

- Database management systems, Database architecture, Database models, Relational database model, Operations on relations, and Database design.

Ch15. Data Compression

- Lossless compression and Lossy compression methods.

Ch18. Artificial Intelligence

- Searching.

Final Test

The Structure of Each Chapter

- **Objectives**
- . . .
- . . .
- **End–Chapter Materials**
  - Recommended Reading
  - Key Terms
  - Summary
- **Practice Set**
  - Quizzes
  - Review questions
  - Problems

Scheduling for ICS CS-4

9/10(Tue,13:10~16:00,C211), 9/17, 9/24, 10/1

10/8 (No Class, Makeup: 11/5 PM for Mid Test)

10/15, 10/22, 10/29, 11/5 Review(1:10PM)

11/5 (Tue, 4:10PM~ at C211, Midtem Test)

11/12, 11/18(Mon,Makeup)1:10PM~,6~8

11/19, 11/25(Mon,Makeup)1:10PM~,6~8

11/26 (No class, Makeup: 11/18(Mon)1:10PM 6~8,C211)

12/3 (No class, Makeup: 11/25(Mon)1:10PM 6~8,C211)

12/10 (No class, Makeup: 1/6(Mon),1:10PM~,6~8,C211)

12/17, 12/24, 12/31, 1/6(Mon, Makeup, Final Test) 1:10PM, 1/7 (Tue, 1:10PM~ at C211)