

Introduction to Computer Science and Programming Language  
11120BMES240200  
計算機概論與程式語言

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Lecture Time	Wednesday 09:00~12:00 @醫環館 R110 (第二週起於電腦教室 I 上課)
Office Hour	Thursday 13:00~15:00 (appointment via E-mail in advance)

### 建議先修課程 (Prerequisites)

無

### 指定用書 (Textbook)

1. 課堂投影片/講義 (eclass)
2. 張智星; MATLAB 程式設計 入門篇; 4th Edition, 2016.
3. 張智星; MATLAB 程式設計 進階篇; 2nd Edition, 2014. (E-book)
4. David M. Smith; Engineering Computation with MATLAB, 3rd Edition, 2012.

### 其他參考用書 (Optional References)

1. Greg Anderson, David Ferro, Robert Hilton; Connecting with Computer Science, 2nd Edition, 2011.

### 課程目標 (Course Objectives)

1. Learn basic concepts of computer science
2. Develop problem-solving and critical thinking skills
3. Learn fundamental programming skills of MATLAB

### 課程內容

1. Data storage
2. Algorithm
3. MATLAB: matrix
4. MATLAB: flow control
5. MATLAB: m file, help
6. MATLAB: 2D graphic functions
7. MATLAB: 3D graphic functions
8. MATLAB: Read & Display
9. MATLAB: Characters, strings
10. MATLAB: Cell, Structure
11. MATLAB: Function
12. MATLAB: GUI & Apps
13. MATLAB: Fitting & Excel
14. MATLAB: AI

## 成績考核 (Evaluation)

### 重要提醒: 不接受遲交補交報告作業

#### 1. Lecture team work: 70%

- 3 persons/group
- Explanation of code
  - One person/question
  - Each group: usually at least one question per lecture
- Evaluation form:
  - Teacher: 35% (code + explanation)
  - TA: 25% (code)
- Course participation: 10%

#### 2. Final project: It is show time!! (30%)

- 3 persons/group
- 以 Matlab 自製動畫影片或小遊戲, 需有故事結構, 需有音樂/歌曲/音效.
- Proposal (2%)
  - Three-page A4 以內 (字型:12; single space; 中英文不拘)
  - (1) 題目、組員(姓名系級學號)
  - (2) 內容簡述: 需列出影片架構; 詳列需要用到哪些課堂上會教的功能或程式概念; 可能遇到之難題.
  - (3) 說明與本課程之相關性
- Midterm report (4%)
  - Five-page A4 以內 (字型:12; single space; 中英文不拘)
  - (1) 簡述目前執行情況 (包含已執行及未執行部分)
  - (2) 說明遇到的困難及預計如何解決?
- Presentation (20%): 報告當天請印一份投影片講義並繳交程式碼與成果電子檔
  - 15 min presentation + 5 min Q&A
  - 學生賞析: 各組提供建議, 試執行動畫或小遊戲
  - 老師評分: 20% (口頭+書面)
- Team work contribution (4%): 針對組內組員於平時討論之參與度及貢獻度進行說明, 供老師參考.

#### 3. Bonus: max. 5%

## 課程助教 (Teaching assistant)

- To be determined
- 研究室: BMES R412
- 電話: 03-5715131 ext. 35565
- Email: To be announced
- 請各組組長今天 email 給助教, 並確認有收到助教的回信:
  - Email subject: 計算機概論與程式語言課程:
  - 組員編號(組長資料放在第一位), 學號, 姓名, email addresses