BIOMETRICS COURSE

Dr. Terence Sim

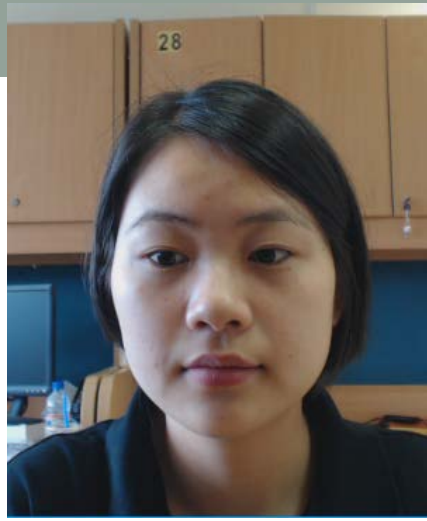
Summer 2017

Instructor: Dr. Terence Sim

- Assoc. Prof., School of Computing, NUS
  - Face recognition, Biometrics
  - Computational photography
- Assistant Dean, Corporate Relations, SoC
- Ph.D. CMU, MSc. Stanford, S.B. MIT
- Contact: tsim@comp.nus.edu.sg or Google me

http://www.comp.nus.edu.sg/~tsim/

TA: Li Jing (李静)



- Ph.D student in the Computer Vision Lab of Computer Science Department, School of Computing, National University of Singapore. My research interest is mainly focused on biometrics. In particular, I worked on speaker recognition, face expression recognition and face identification. I have also explored continuous authentication and cancelable biometrics.

- Aug 2013 - Present, PhD Candidate, School of Computing, National University of Singapore, Singapore
- Sep 2009 - Jun 2013, B.S. in Computer Science, University of Science and Technology of China, P.R. China

- Contact: lijing@comp.nus.edu.sg

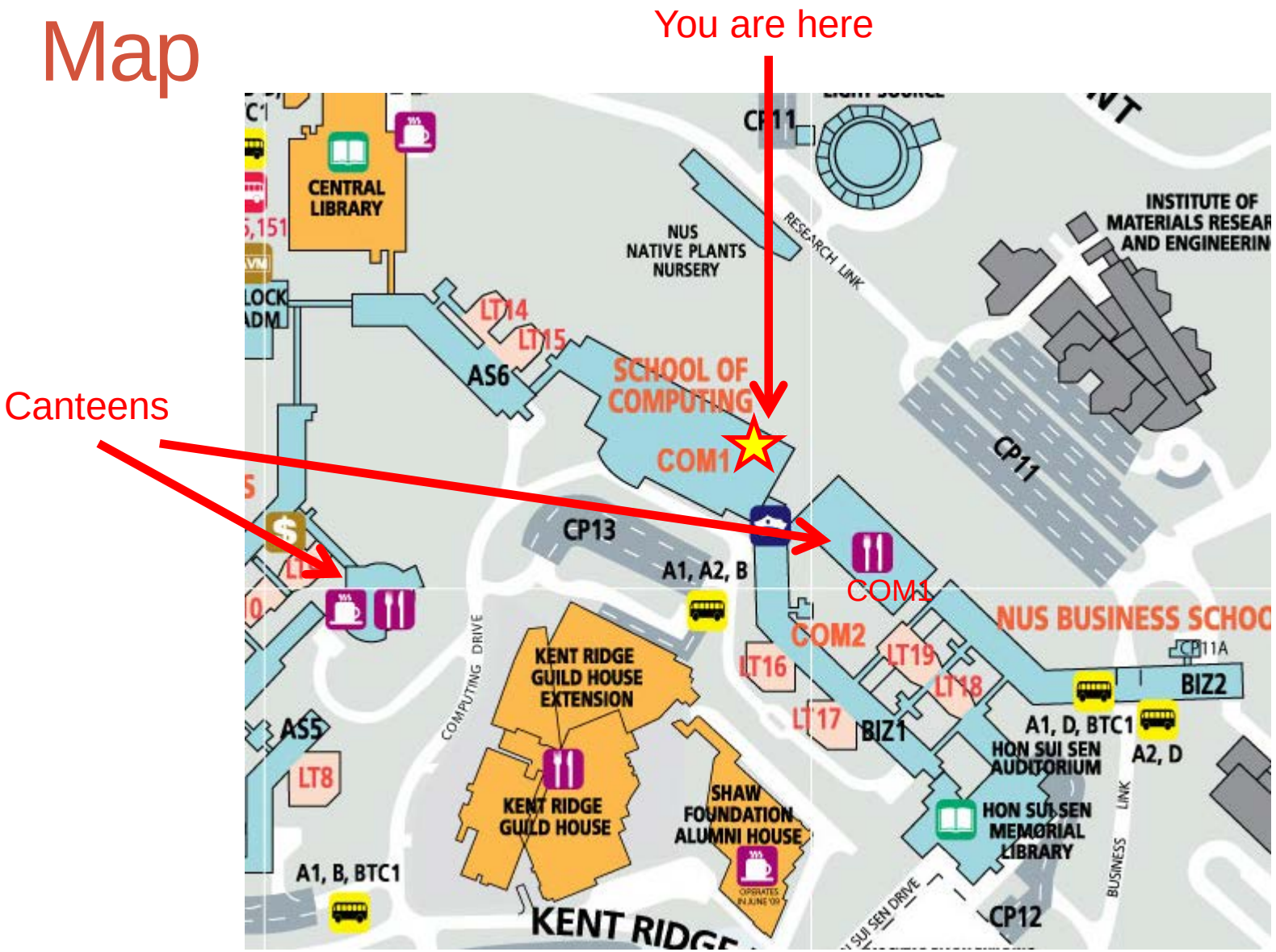
Basic rules

- Submit all 5 assignments on time
- Grades: A, B, C, etc.
- Certificate of completion will be given
- Keep labs and classroom clean. Clear out any trash.
- No food in labs/classrooms; beverages ok
- Be courteous and considerate
  - No phone calls in class
  - Silence your phone
- Lessons conducted in English

Daily Schedule

Time	Activity	Venue	Remarks
09:30am	Lecture	VC Room	
11:00am	*Break*		
11:15am	Lecture	VC Room	
12:30pm	*Lunch*		On your own
2:00pm	Hands-on	Media Lab 1 and 2A	
5:00pm	*End*		

Map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NUS NATIVE PLANTS NURSERY
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INSTITUTE OF MATERIALS RESEAR AND ENGINEERIN
CP11
LT14
LT15
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BIZ2
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A2, D
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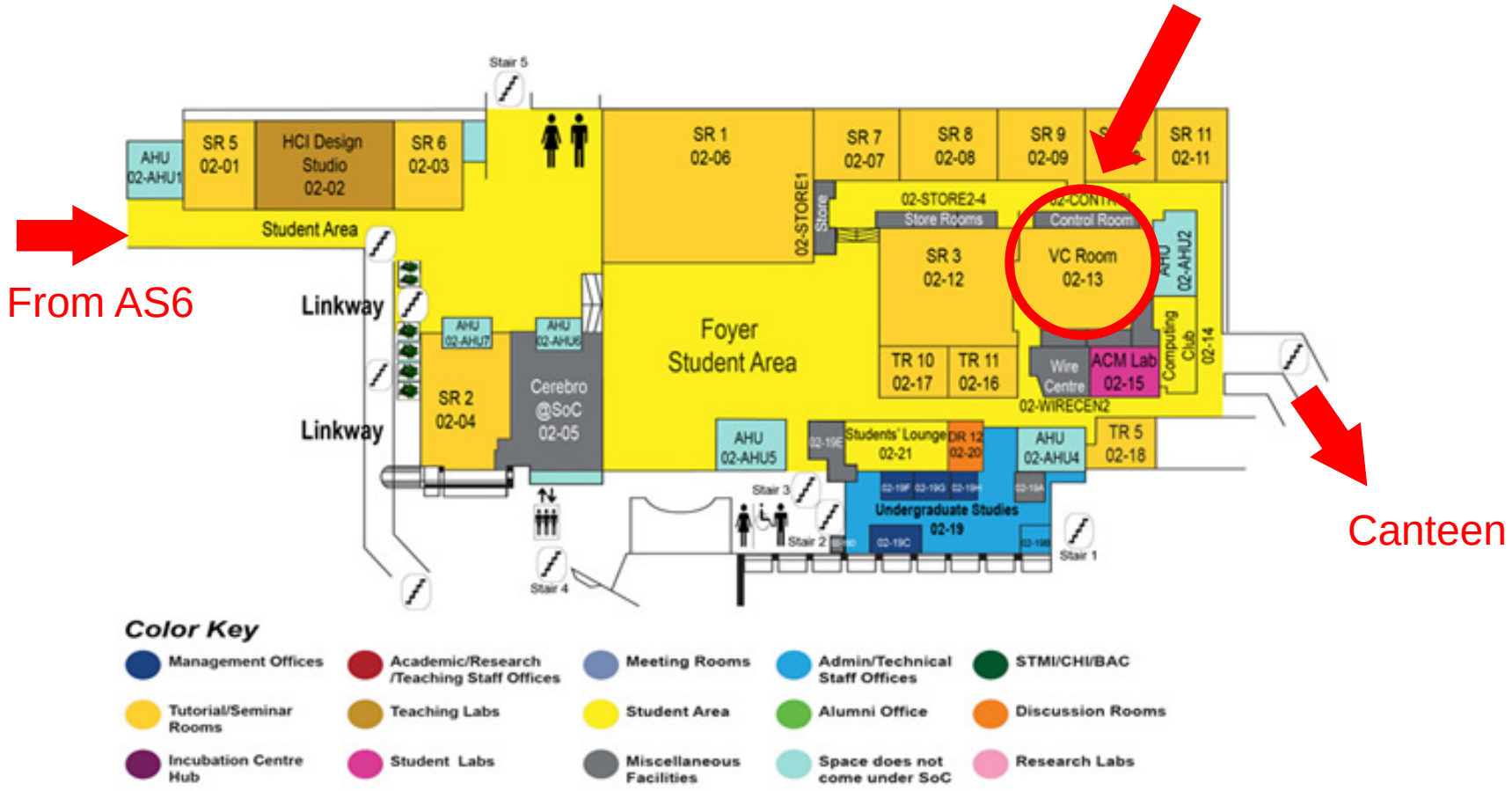
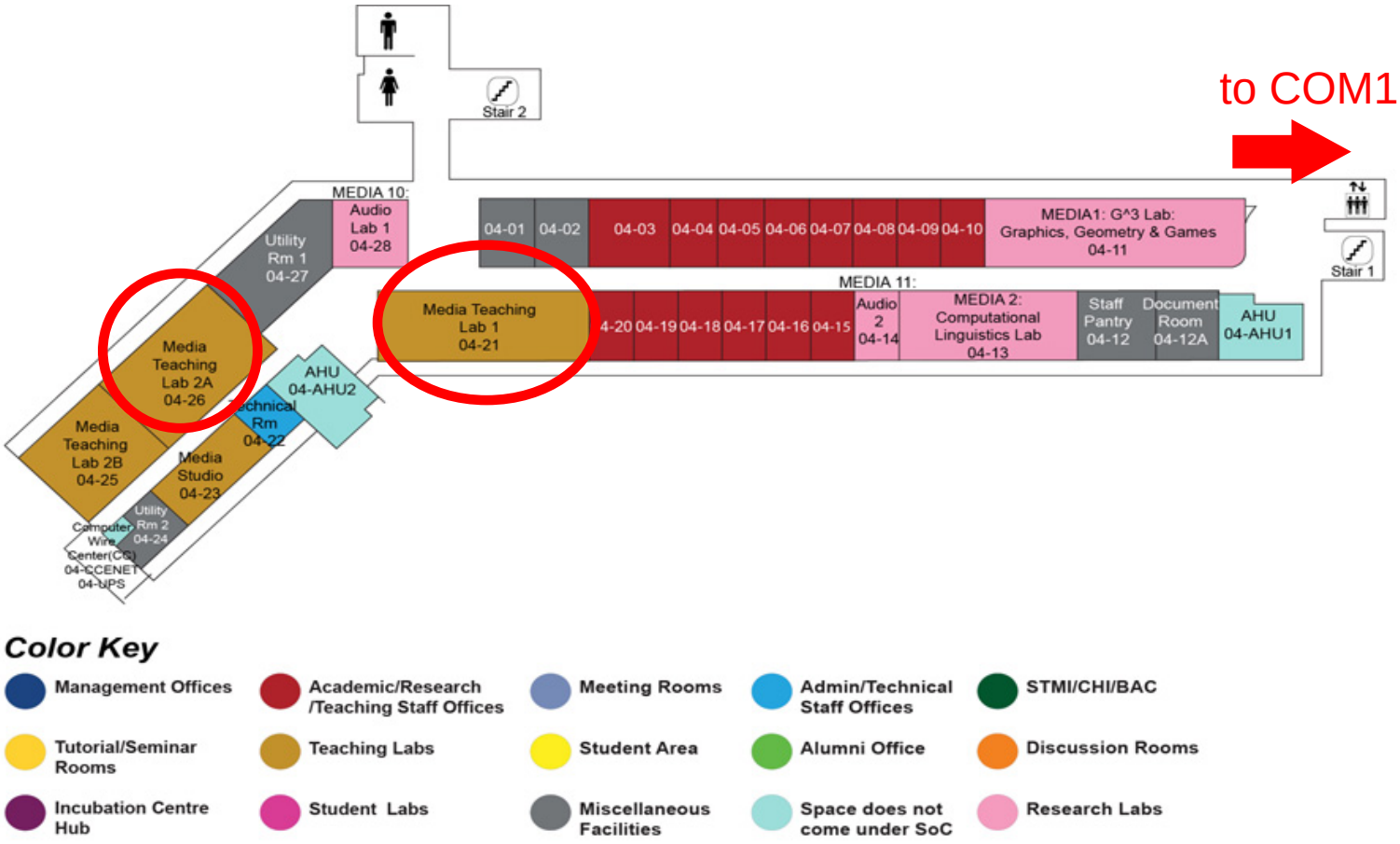
HON SUI SEN MEMORIAL LIBRARY
BUSINESS LINK
AS5
LT8
COMPUTING DRIVE
KENT RIDGE GUILD HOUSE EXTENSION
KENT RIDGE GUILD HOUSE
SHAW FOUNDATION ALUMNI HOUSE
A1, B, BTC1
KENT RIDGE
HON SUI SEN DRIVE
CP12

COM1 2nd floor



AS6 4th floor



Day	Topics	Remarks
Day 1		
am	Intro to biometrics + pattern recognition; identification vs verification; different types of biometrics;	Lecture1-1 to Lecture1-5
pm	Pattern recognition tutorial + hands-on	PR-handson
Day 2		
am	Python overview, basic grammar and usage	Lecture2_Python
pm	Hands-on, some basic examples or tutorial, how to read/write image, plot figures	Due: Assignment1: Python
Day 3		
am	Image processing, image filtering, median filtering, average filtering, de-noise; histogram equalization	Lecture3_ImageProcessing
pm	Hands-on: image processing	Assignment 2: Image processing
Day 4		
am	Image processing continued: convolution	Lecture3_ImageProcessing
pm	Assignment 2 continued	Due: Assignment2
Day 5		
am	Linear algebra: review and advanced material	Lecture 4,5,6
pm	Hands-on: linear algebra	Assignment 3: Linear algebra + SVD
Day 6		
am	Linear algebra continued; Applications: geometric transformation	
pm		Due: Assignment 3
Day 7		
am	Probability and statistics review	Lecture7
pm	Hands-on:	Assignment 4
Day 8		
am	Comparing biometrics; performance: far, frr, roc, auc; pattern recognition	Lecture 8-1, 8-2
pm	Hands-on:	Assignment 4 continued
Day 9		
am	Pattern recognition continued	Lecture9
pm	hands-on: continued	Due: Assignment 4
Day 10		
am	Feature extraction	Lecture10
pm	Hands-on: PCA, LDA	Assignment 5: face recognition
Day 11		
am	Fusion methods; Defeating biometrics; Trends;	Lecture notes
pm		Assignment 5: continued
Day 12		
am	Face game; Supplementary videos	Lecture 11-1, 11-2
pm		Due: Assignment 5
Day 13		
am	Exam	

Questions? Comments?