

# IERG 6154: Network Information Theory

Prof. Chandra Nair

Office: SHB 811

e-mail: [chandra@ie.cuhk.edu.hk](mailto:chandra@ie.cuhk.edu.hk)

web: [chandra.ie.cuhk.edu.hk](http://chandra.ie.cuhk.edu.hk)

Department of Information Engineering  
The Chinese University of Hong Kong

Spring 2019

# Lectures

The course will be given by **Prof. Chandra NAIR**.

Venue details

- **Mondays** from 9:30 am to 11:15 pm, in SHB 833
- **Tuesdays** from 9:30 am to 11:15 pm, in SHB 833

My office hours for this class (SHB 811)

- **Tuesday** from 2:00 pm to 3:00 pm

# Course material

- Class Notes
- Reference: Network Information Theory
  - By Abbas El Gamal and Young-Han Kim
  - Cambridge University Press
  - Highly recommended

# Course Outline

- 1 Introduction
- 2 Review of basic information theory
- 3 Point-to-Point Information Theory
- 4 Multiple Access channels
- 5 Degraded broadcast channels
- 6 Interference channel
- 7 Channels with State
- 8 General broadcast channel
- 9 Gaussian vector channels
- 10 Distributed lossless source coding

# Online resources

Direct your browser to

<http://elearn.cuhk.edu.hk/>

and login using your CUHK Computing ID and CWEM password.

You should then be able to select

[2018-19 Term 2 - Network Information Theory](#)

Main communication channel between teacher and students

- PIAZZA - all discussions will be hosted there
  - Signup link: [piazza.com/cuhk.edu.hk/spring2019/ierg6154](https://piazza.com/cuhk.edu.hk/spring2019/ierg6154)
  - Class link: [piazza.com/cuhk.edu.hk/spring2019/ierg6154/home](https://piazza.com/cuhk.edu.hk/spring2019/ierg6154/home)

# Percentages

The final mark will be a weighted sum of three items

- Homeworks 20%
- Written examination (take home) 40% - third week of April !!
- Project 40%

# Written examination

## Examination details

- Take home, multi day examination
  - Give-out: Wednesday, Hand-in: Monday
- Please refrain from using internet
- No collaboration

## Projects

- List of topics handed out in late-February
- Self-suggested topics also welcome
- We will reserve a day for project presentations
- You are welcome to talk to me