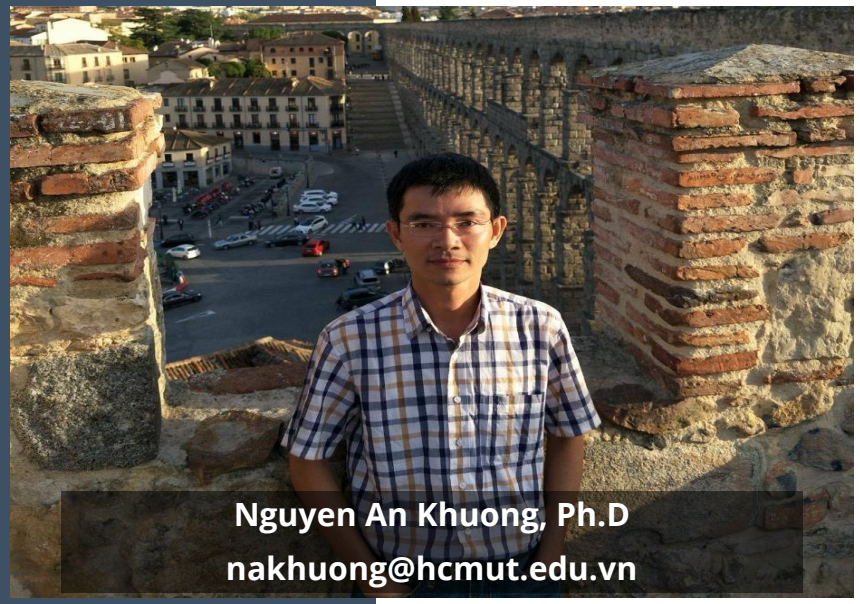
# DISCRETE STRUCTURES FOR COMPUTING

Tuan Anh Tran

CSE - HCMUT

# 1. Lecturers:
(Semester 221)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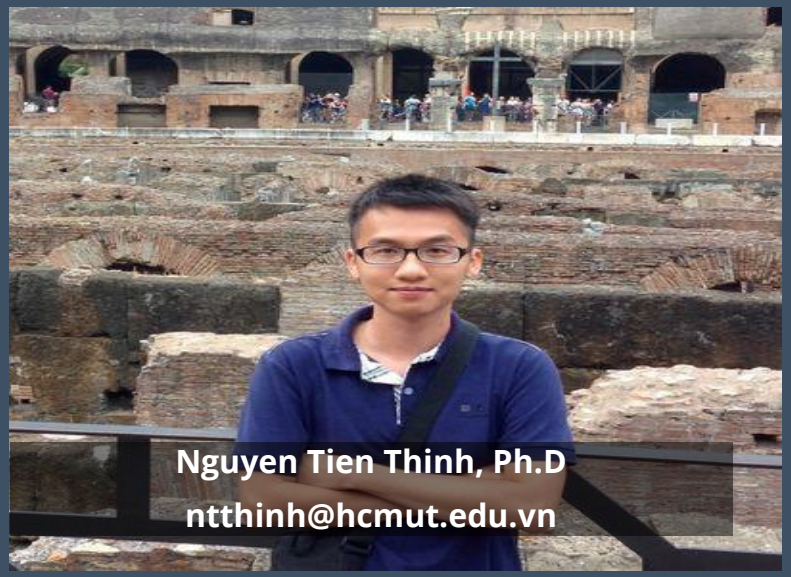
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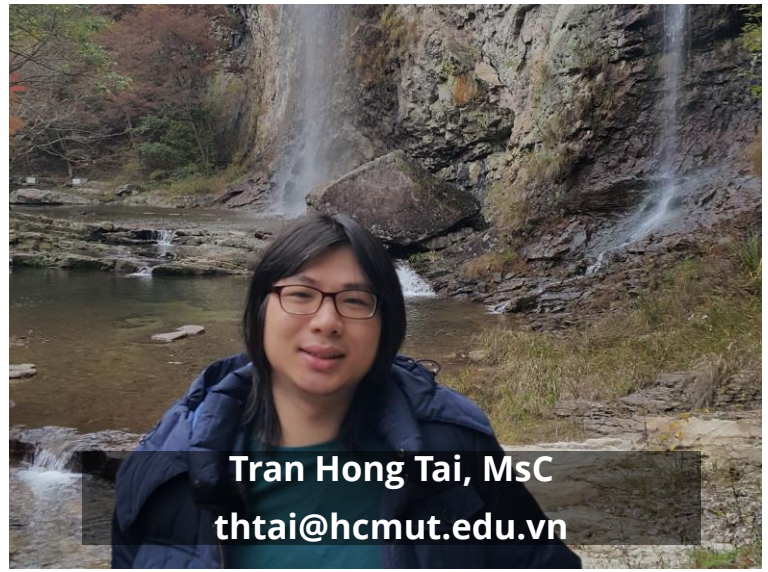
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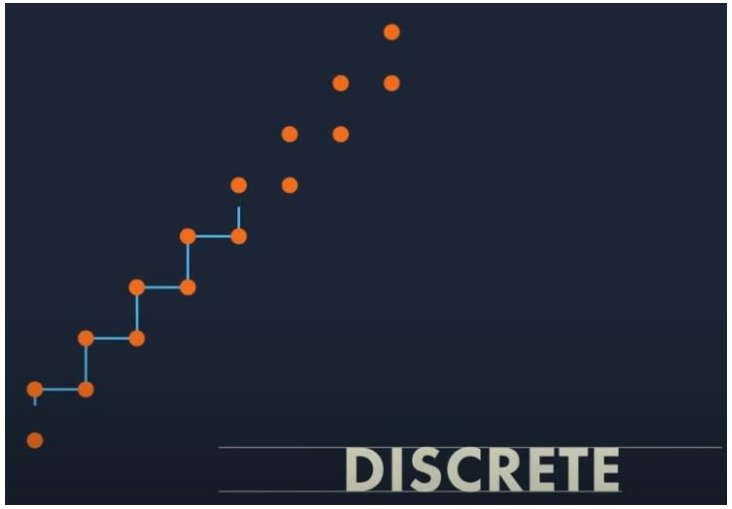
# 2. Introduction

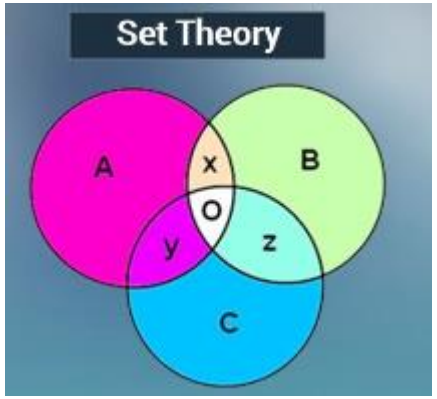
## Why Discrete Mathematics?

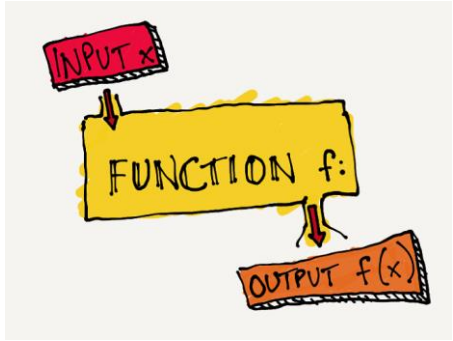




https://www.youtube.com/watch?v=q4L-wUF3yig

# 3. Contents

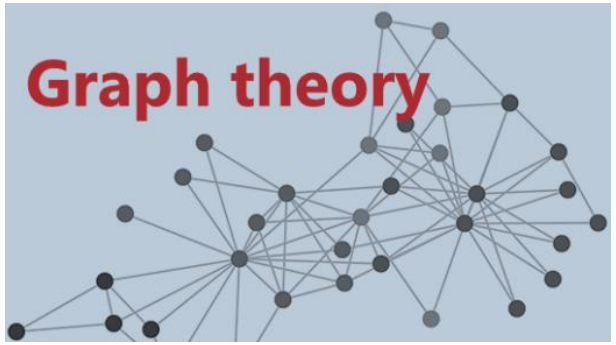
**15 WEEKS & 11 CHAPTERS**

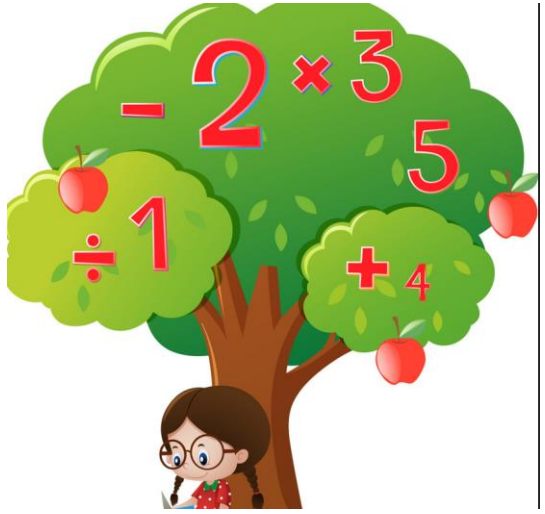










http://e-learning.hcmut.edu.vn/course/view.php?id=67408

# 3. Contents

**Teaching plan**

| Class | Week | Date | Content | Kind of teaching | Nội dung thi | |
|---|---|---|---|---|---|---|
| 1 | 1 | 2/1-8/1 | Chapter 0& 1 - Introduction & Logic | Offline | | |
| 2 | 2 | 9/1-15/1 | Chapter 2 - Logic (cont) | Blended | | |
| | 3 | 16/1-22/1 | | | | |
| | 4 | 23/1-29/1 | Nghỉ tết | No | | |
| 3 | 5 | 30/1-5/2 | Chapter 3 - Proof | Blended | | |
| 4 | 6 | 6/2-12/2 | Overview 1-2-3 & Chapter 4 - Set | Offline | | |
| 5 | 7 | 13/2-19/2 | Chapter 5 - Function | Offline | | |
| 6 | 8 | 20/2-26/2 | Chapter 6 - Relation | Offline | Thi giữa kì | |
| 7 | 9 | 27/2-5/3 | Chapter 7 - Counting | Offline | | |
| | 10 | 6/3-12/3 | | | | |
| | 11 | 13/3-19/3 | | | | |
| | 12 | 20/3-26/3 | | | | |
| | 13 | 27/3-2/4 | Học quân sự/Thi giữa kì | No | | |
| 8 | 14 | 3/4-9/4 | Chapter 8 - Probability | Offline | | |
| 9 | 15 | 10/4-16/4 | Chapter 8 - Probability | Offline | | |
| 10 | 16 | 17/4-23/4 | Chapter 9 - Graph | Offline | | |
| 11 | 17 | 24/4-30/4 | Chapter 10 - Connectivity | Offline | | |
| 12 | 18 | 1/5-7/5 | Chapter 10 - Connectivity | Offline | | |
| 13 | 19 | 8/5-145 | Chapter 11 - Tree | Offline | | |
| 14 | 20 | 15/5-21/5 | Chapter 11 - Tree | Offline | | |
| 15 | 21 | 22/5-28/5 | Free | Blended | | Thi Cuối kì |

# 4. Resources

1. Slides are updated and sent to students. We can print out and use in the class.
2. References


[1] Discrete mathematics and applications – Kenneth H. Rosen.

[2] Discrete Mathematics and Applications, Kevin Ferland, Chapman and Hall/CRC.

[3] Graph Theory and Its Applications, Jonathan L. Gross, Jay Yellen & Mark Anderso, Chapman and Hall/CRC.

[4] The Mathematics of Chip-Firing, Caroline J. Klivans, Chapman and Hall/CRC.

**[5] Our master: GOOGLE**


3. Programming languages: Python, Matlab, C++

# 5. Requirements

Attend every class and ask yourselves why you are here? What is your goal?

Keep in your mind  that we will not teach a topic twice. You must review everything you have studied in class. Read the textbooks carefully and solve the exercises therein as much as possible ...

Teamwork and coding skill

Respect each other

# 6. Evaluation

1. Midterm Exam (30%)

- Multiple choice exam, 60 minutes, closed book
- Content: from Logic to Relation

2. Assignment (20%)

- Not decided yet based on your studies (but always teamwork): a real problem and need the combination of math and code
- Duration: 4-5 weeks.

3. Final exam (50%)

- Multiple choice exam, 80-90 minutes, closed book
- Content: from Logic to the End

# Evaluation

Given during study

= 0.3 *(Midterm + volunteer) + 0.2* (Code + report + present) + 0.5*Final exam

Midterm (30%) Assignment (30%) Final (50%)


Q&A