Introduction to Approximation Algorithms

Mong-Jen Kao (高孟駿)

Friday 13:20 – 15:10

About this Course

Course Website:

https://sites.google.com/nycu.edu.tw/113-1-approx/

- ■ This course is designed for both **graduate** and **undergraduate** students who are interested in algorithm-design concepts for NP-hard combinatorial optimization problems.

    - – We aim to cover approximation algorithms for a wide category of fundamental problems.

    - – A fair level of understandings on *Algorithms*, *Linear Algebra*, and *Probability* is expected.

Course Material

- ■ The course material is mainly selected from the following two reference books.

  - – Vijay Vazirani,

    "Approximation algorithms", 2004.

  - – David Williamson and David Shmoys,

    "The design of approximation algorithms", 2012.
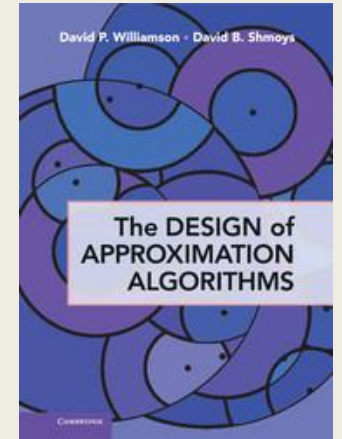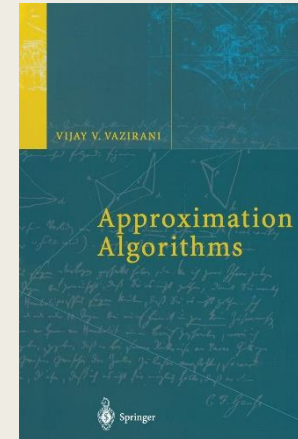
Course Evaluation

■ The course evaluation consists of 4 parts.

 – (30%). 2-3 Handwritten Homework

  ■ Problems for you to think and get familiar with the concepts of this course.

 – (30%). 1 Midterm Exam

  ■ Covers the <u>basic important concepts</u> & possibly a few <u>somewhat-advanced problems</u> for you to think & to enjoy.

Course Evaluation

■ The course evaluation consists of 4 parts.

　– (20%). Book Chapter Report & In-Class Presentation

　　■ Read selected book chapter and compile a report (per person)

　　■ Form groups and make a brief introduction (~20mins) on the content.

Course Evaluation

- The course evaluation consists of 4 parts.

    - (20%). Group Paper Presentation

        - 6~8 ppl per group

        - A list of papers will be provided to choose from.

        - You need to read the paper and
          give a presentation on the paper during lecture time.

Endorse / Audit Policy

- In general, I will sign the endorsement form.

  - However, I will not sign the withdrawal form.

- All the course material will be available on our course website.

  - Hence, you can proceed without my admission
    if you plan to audit this course.