

THE CHINESE UNIVERSITY OF HONG KONG
DEPARTMENT OF MATHEMATICS
MATH3220 Operations research and Logistics

Course Information

- **Instructor:** Dr. Pan Li
Office: Room 233, LSB
Consultation Hours: Tue 16:30 - 17:30, Wed 14:00 - 16:00 (or by appointment)
Email: lpan@math.cuhk.edu.hk
Phone: 3943 7956

- **Demonstrator:** Mr. Choi Pui Tung
Office: Room 222B, LSB
Consultation Hours:
Email: ptchoi@math.cuhk.edu.hk
Phone: 3943 7963

- **Time and Venue**
 - Lecture: Tue 14:30 - 16:15, Thu 15:30 - 16:15 LT4
 - Tutorial: Thu 14:30 - 15:15 LT4

- **Course website:**
<http://www.math.cuhk.edu.hk/course/math3220/>

- **Assessment**
 1. Assignments: 10%
(Please drop your work in the assignment box marked MATH3220 on the 2nd floor of LSB. The assignment is due by 17:00 on the due date. No late work will be accepted.)
 2. Midterm Exam: 40%
 3. Final Exam: 50%

- **Teaching Scheduling**

1. **Lectures:** The lectures will be held on Tuesdays and Thursdays. The lectures will be used to introduce concepts and develop theories and algorithms. Note that there will be NO classes in the Chinese New Year break and Easter break.
2. **Tutorials:** To facilitate the understanding of the course content, there will be 9 tutorials scheduled in this term starting from the next week. Recitation attendance is optional. Recitations will cover problems that are similar to the ones on the current problem set. You will be asked to work out solutions to the problems in the tutorial sheets, and to discuss and present (informally) the solutions during the tutorial.
3. **Example Classes:** There will be 4 Example classes in total. On these classes, the demonstrator will present the solutions to the assignment problems. Extra problems and examples will be discussed if time allows.
4. **Test:** There will be one class test (Midterm test). The tentative date for the test is on 3rd March. If in any doubt, check with the instructor.

- **Course Description**

This course is intended to provide students with a fundamental account of the basic results and techniques of integer programming (IP), dynamic programming (DP), and Network models in Operations research. There is emphasis on aspects of algorithms as well as applications. The course serves, together with courses on MATH3210 linear programming to provide essential optimization concept and algorithms for more advanced studies in operations research.

- **Outlines of topics**

1. Integer Programming
2. Dynamic Programming
3. Network Models

- **Reference Books**

1. Class lecture notes - This course will follow closely with the lecture notes which can be downloaded from the course website.
2. *Operations Research: An Introduction* by H.F. Taha
3. *Introduction to Operations Research* by F.S. Hillier and G.J. Lieberman
4. *Applied Mathematical Programming* by S.P. Bradley, A.C. Hax, and T.L. Magnati
5. *Linear and Combinatorial programming* by K.G. Murty

- **Suggestions for Students**

1. If you are not able to attend a lecture, it is your responsibility to catch up on the topics that you missed. You should keep in mind that in this course (and other mathematics courses), the material builds on itself. If you miss some of the material, subsequent lectures will be more difficult for you.
2. The assignments serves as a review of the lecture materials and are intended to be prepared for the midterm/final exam. You are therefore highly recommended to do every question assigned by your own. You are welcome to seek help from us whenever you have any problems.
3. If you begin to have problems in a particular lecture, seek assistance immediately. Check our consultation hours. If you are not able to see us at the special times, you could make an appointment in advance through emails, or you could just drop by our office and see if we are free for answering your questions.
4. Try to study with your fellow students and to organize study groups to share ideas.
5. All the course material and important announcements will be uploaded on the course homepage. Please make it a habit to check it regularly.