CSC400 801/811

Discrete Structures for Computer Science
Spring 2020

Instructor : Dr. I-ping Chu
~~Lecture : Th 5:45 to 9:00 pm   Room : CDM 220~~
~~Office : Loop CTI 602   phone : 312-362-5817~~
Office Hour : Th 4:15 – 5:45 pm   (conduct through email exchange)

Due to COVID-19, this course is held 100% online.
The course material for each week will be available before 5:45 pm each Thursday.
All communications are through email or D2L discussion Forum.
Email : ichu@depaul.edu

Text : Mathematics for Computer Science

Author(s):

Eric Lehman Google Inc.

F Thomson Leighton MIT, Akamai Technologies

Albert R Meyer MIT

Publisher: **https://courses.csail.mit.edu/6.042/spring18/mcs.pdf**

Other References:

Discrete Mathematics with Applications, 4th edition,

by Susanna Epp, Brooks/Cole Cengage Learning, 2011,   ISBN: 978-0495391326.

Summary of the course:

This course covers the basic mathematical tools essential for solving problems in computer science. The mathematical topics are presented with emphasis on their applications in computer science. The topics covered include: logic and set theory, relations, functions, graphs, and counting and probability.

Course Management System : D2L (https://d2l.depaul.edu/d2l/home)

Course Works :

Exams	**Midterm(30%) Final (30%)**	

Homeworks/Quiz	40%	

Grading Policy:

- 90 - 100 A | 80 - 89 B | 70 - 79 C | 60 - 69 D | 0 - 59 F

Learning Outcomes :

After successfully passing this course (by doing all the assignments and passing all the exams), student should be prepared to solve the problems in computer science.

university academic calendar

course outline :

I. Proofs			
II. Numbers			
III. Sets and functions			
IV. Counting			
V. Probability			
VI. Structures			

CSC400 Tentative Schedule

Week#	Date	Subject	Text (Reference)
1	04/02	Logics (Propositional & predicate) Number systems	Ch 1 , 3
2	04/09	Method of Proof, Inference rules Number Theory, Mathematical Induction and recursions	Ch 1, 5, 7, 9
3	04/16	Set & Functions Relations	Ch 4.1 , 4.3 4.4
4	04/23	Sequences, recurrence relation Asymptotic notation Generating Functions	Ch 4.2 14, 16, 22
5	04/30	Counting Methods	Ch 15
6	05/07	Midterm exam	Week 1 through 5
7	05/14	Introduction to probability	Ch 17 18 19 20 21
8	05/21	Introduction to Graphs and Trees	Ch 10 12 13
9	05/28	Introduction to Graphs and Trees (cont.)	Ch 1 Ch 10 12 13
10	06/04	Finite State Machine, Automata Languages and Grammars (optional, if time allows)	Ch 6
11	06/11	**Final exam**	Comprehensive