Discrete Math 2018

課程名稱	課程大綱	評量方式
離散數學	➢ Logic: Propositonal logic, Predicate Logic ➢ Basic Structures: Sets, Functions, Sequences, Sums, Matrices ➢ Introduction to Algorithms ➢ Number Theory and Cryptography: Divisibility, Modular Arithmetic, Integer Representations, Primes, Greatest Common Divisors, the Chinese Remainder Theorem, Cryptography ➢ Counting: Permutations, Combinations, Binomial Coefficients and Identities ➢ Recurrence Relations ➢ Relations: Relations and their properties, Equivalence Relations, Partial Orderings)	1. 課程參與(10%) 2. 作業(20%) 3. 報告(20%) 4. 期末考(50%)

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CHAPTERS	FILES
Complete course notes	(PDF - 3.2MB)
Part I: Proofs	
Chapter 1: Propositions	(PDF)
Chapter 2: Patterns of proof	(PDF)
Chapter 3: Induction	(PDF)
Chapter 4: Number theory	(PDF)
Part II: Structures	
Chapter 5: Graph theory	(PDF)
Chapter 6: Directed graphs	(PDF)
Chapter 7: Relations and partial orders	(PDF)
Chapter 8: State machines	
Part III: Counting	
Chapter 9: Sums and asymptotics	(PDF)
Chapter 10: Recurrences	(PDF)
Chapter 11: Cardinality rules	(PDF)
Chapter 12: Generating functions	(PDF)
Chapter 13: Infinite sets	(PDF)

Mathematics for Computer Science

revised Wednesday 8th September, 2010, 00:40

Eric Lehman
Google Inc.

F Thomson Leighton
Department of Mathematics and CSAIL, MIT
Akamai Technologies

Albert R Meyer
Massachusets Institute of Technology

Stanford

that you're able to join us.

I'll see you for our first day of class 3:00 PM - 4:20 PM in STLC 111! (STLC is the Old Chemistry building near the Oval.)

If you have any questions in the meantime, feel free to email me at **cbl@cs.stanford.edu**.

See you soon!

- **Assignment Handout**
- **Starter Files**
- **LaTeX Template**
- **PSet 2 checkpoint submission form**
- **Solutions**

Problem Set 1

- **Assignment Handout**
- **Starter Files**
- **LaTeX Template**
- **Checkpoint Solutions**
- **Solutions**

Problem Set 0

- **Starter Files**

Practice Problems

Practice Final Exam 6
(solutions)
Practice Final Exam 5
(solutions)
Practice Final Exam 4
(solutions)
Practice Final Exam 3
(solutions)
Practice Final Exam 2
(solutions)
Practice Final Exam 1
(solutions)
Extra Practice Problems 3
(solutions)
Practice Second Midterm 6 (dress rehearsal exam)
(solutions)
Practice Second Midterm 5
(solutions)
Practice Second Midterm 4
(solutions)
Practice Second Midterm 3

13: Induction
Slides

12: Induction
Slides

11: Graphs II: Pigeonhole
Slides

10: Graphs I
Slides (Part 1) Slides (Part 2)

09: Cardinality
Slides

08: Binary Relations III
Slides

07: Binary Relations II
Slides

06: Binary Relations
Slides

05: More Predicate Logic
Slides

04: Predicate Logic
Slides

03: Propositional Logic
Slides

02: Indirect Proofs
Slides

01: Proof-Writing
Slides

00: Set Theory
Slides

13: Induction
Slides

12: Induction
Slides

11: Graphs II: Pigeonhole
Slides

10: Graphs I
Slides (Part 1) Slides (Part 2)

09: Cardinality
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04: Predicate Logic
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03: Propositional Logic
Slides

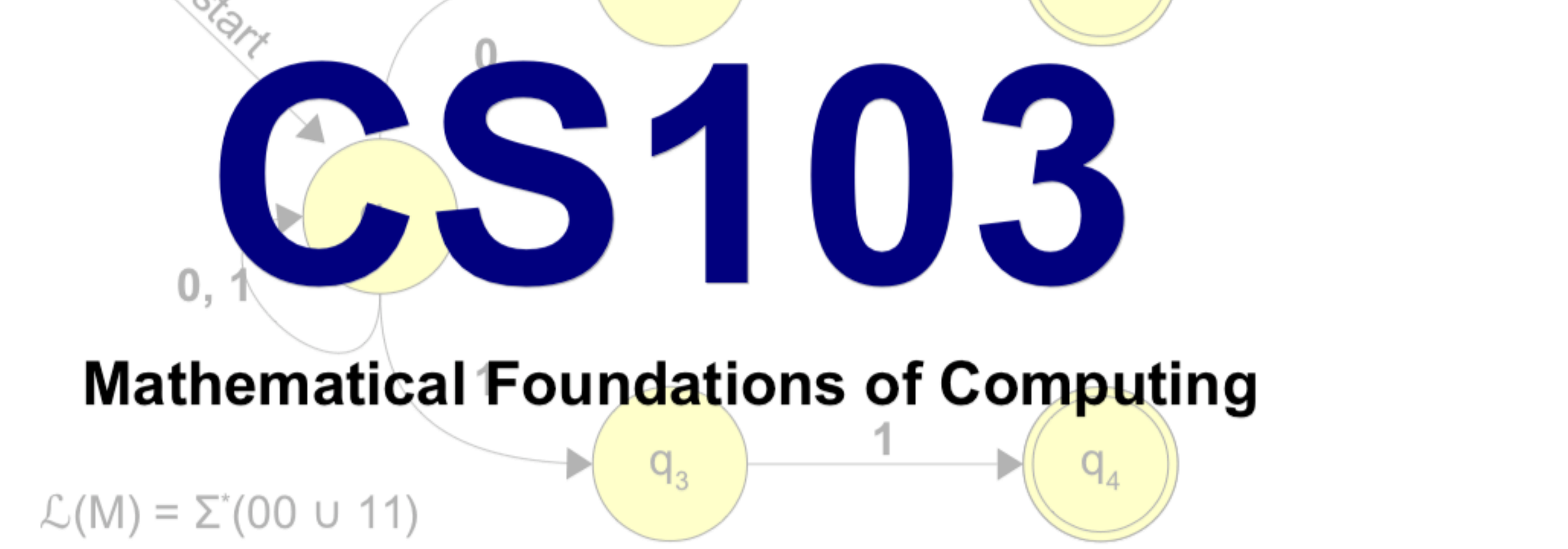
02: Indirect Proofs
Slides

01: Proof-Writing
Slides

Proofs
Chapter 1: Propositions
Chapter 2: Patterns of proof
Chapter 3: Induction
Chapter 4: Number theory
Part II: Structures
Chapter 5: Graph theory
Chapter 6: Directed graphs
Chapter 7: Relations and partial orders
Chapter 8: State machines
Part III: Counting
Chapter 9: Sums and asymptotics
Chapter 10: Recurrences
Chapter 11: Cardinality rules
Chapter 12: Generating functions
Chapter 13: Infinite sets
Part IV: Probability
Chapter 14: Events and probability spaces
Chapter 15: Conditional probability
Chapter 16: Independence
Chapter 17: Random variables and distributions
Chapter 18: Expectation

Resources

Course Reader
CS103A Website
Guide to ∈ and ⊆
Qt Creator
Office Hours Calendar
Truth Table Tool
Guide to Negations
Guide to Logic Translations
Guide to Cantor's Theorem
DFA/NFA Editor
Regex Editor
Regex Equivalence Tester
CFG Editor
TM Editor
Guide to Self-Reference
Guide to the Lava Diagram



CS103

Mathematical Foundations of Computing

Preliminary Course Notes

Keith Schwarz

Fall 2015

Notes on Discrete Mathematics

James Aspnes

2018-06-26 19:31

Applied Combinatorics

Preliminary Edition

February 15, 2015

Mitchel T. Keller
Washington & Lee University

William T. Trotter
Georgia Institute of Technology

E books of NDHU

1	☐	An Introduction To Programming And Numerical Methods In Matlab
2	☑	Computational Discrete Mathematics
3	☑	Discrete Mathematics
4	☐	Numerical Analysis For Statisticians
5	☑	Discrete Mathematics - Elementary And Beyond
6	☐	A Guide to MATLAB Object-Oriented Programming
7	☐	Numerical Methods for Unconstrained Optimization and Nonlinear Equations
8	☑	Discrete Mathematics of Neural Networks: Selected Topics
9	☐	Numerical Methods in Scientific Computing, Volume I
10	☐	Topics in Finite and Discrete Mathematics
11	☑	Discrete mathematics: elementary and beyond