问题求解（二）2024年春季

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| 周 | 日期 | 课程内容 | 学习内容 | 书面作业 |
| 1 | 2.26-3.3 | 算法问题与解题的算法 | TC-1、2、3 | TC prob.2-1—2-4、TC prob.3-2—3-4 |
| 2 | 3.4-3.10 | 组合与计数 | CS-1 | CS 1.2-1、CS 1.2-5、CS 1.2-6、CS 1.2-15、CS 1.5-4、CS 1.5-12  选做：算法计数题 |
| 3 | 3.11-3.17 | 分治法与递归 | TC-4 | TC 4.1-5、TC 4.3-3、TC 4.4-5、TC 4.5-4、TC Problem 4-1、TC Problem 4-3 (Except f and j)  选做：TC Problem 4-3 (f and j) |
| 4 | 3.18-3.24 | 递归及其数学基础 | CS-4.1/4.2/4.3/4.4 | CS 4.1-16、CS 4.2-11、CS 4.3-9(c)、CS 4.3-18、CS 4.5-8、CS 4.5-10  选做：**(Linear Recurrences)**  Give initial conditions a0, a1, and a2 for which the growth rate of the solution to    is (1) constant, (2) exponential, and (3) fluctuating in sign. |
| 5 | 3.25-3.31 | 离散概率基础 | CS-5.1/5.2/5.3/5.4 | CS 5.1-10、CS 5.1-12、CS 5.2-4、CS 5.2-10、CS 5.3-2、CS 5.3-12、CS 5.4-10、CS 5.4-15  选做：(**The Ballot Problem**)  In an election, candidate A receives n votes, and candidate B receives m votes where n > m. Assuming that all orderings are equally likely, what is the probability that A is always ahead in the count of votes? |
| 6 | 4.1-4.7 | 概率分析与随机算法 | TC-5  CS-5.6/5.7 | CS 5.6-4、CS 5.6-8、CS 5.7-2、CS 5.7-12、TC 5.2-4、TC 5.2-5、TC 5.3-3、TC 5.3-4、TC Problem 5-2 (e, f, g)  选做：(**The Coin Problem**)  Suppose you have a fair coin. What is the expected number of tosses to get 3 Heads in a row (连续三次正面朝上)? What about n Heads in a row? |
| 7 | 4.8-4.14 | 排序 | TC-7、8 | TC 7.2-2、TC 7.3-2、TC 7.4-2、TC 8.1-4、TC 8.2-4、TC 8.3-4、TC Problem 8-2  选做：TC Problem 7-5 |
| 8 | 4.15-4.21 | 选择 | TC-9 | TC 9.1-1、TC 9.3-7 |
| 9 | 4.22-4.28 | 基本的数据结构 | TC-10  MA-2/3/4.1/4.2 | MA 2.6、TC 10.1-4、TC 10.1-6、TC 10.2-6、TC 10.3-4、TC 10.3-5、TC 10.4-2、TC 10.4-3、TC Problem 10-3  选做：TC 10.1-7 |
| 10 | 4.29-5.5 | 堆与堆排序 | TC-6 | TC 6.1-2、TC 6.1-7、TC 6.2-5、TC 6.2-6、TC 6.3-3、TC 6.4-2、TC 6.4-4、TC 6.4-5 (∗)、TC 6.5-5、TC 6.5-9  选做： |
| 11 | 5.6-5.12 | 哈希 | TC-11、CS-5.5 | CS 5.5-8 (a, b, c)、TC 11.2-3、TC 11.3-3、TC 11.4-3、TC Problem 11-1、TC Problem 11-2  选做：TC 11.2-6 |
| 12 | 5.13-5.19 | 搜索树、红黑树 | TC-12/13 | TC 12.1-5、TC 12.2-9、TC 12.3-5、TC 13.1-5、TC 13.1-7、TC 13.3-1、TC 13.3-5、TC 13.4-1、TC 13.4-7  选做：TC Problem 13-3 |
| 13 | 5.20-5.26 | 动态规划 | TC-15 | TC 15.1-1、TC 15.1-3、TC 15.2-2、TC 15.2-4、TC 15.3-3、TC 15.3-5、TC 15.3-6、TC 15.4-3、TC 15.4-5、TC 15.5-1  选做：TC Problem 15-4: Printing neatly |
| 14 | 5.27-6.2 | 贪心算法 | TC-16 | TC 16.1-2、TC 16.1-3、TC 16.2-1、TC 16.2-2、TC 16.3-2、TC 16.3-5、TC 16.3-8  选做：TC Problem 16-1 |
| 15 | 6.3-6.9 | 用于动态等价关系的数据结构与均摊分析 | TC-17、21 | TC 17.1-3、 TC 17.2-2、TC 17.4-1、TC 21.1-2、TC 21.1-3、TC 21.2-1、TC 21.2-3、TC 21.2-6、TC 21.3-1、TC 21.3-2、TC 21.3-3  选做：TC Problem 21-1 |
| 16 | 6.10-6.16 | 线性规划 | TC-29 | TC 29.1-4、TC 29.1-5、TC 29.2-2、TC 29.2-4、TC 29.2-6、TC 29.3-5、TC 29.4-2、TC 29.2-3、TC 29.4-3、TC Problem 29-1  选做：TC Problem 29-2 |
| 17 | 暑期自学 | 矩阵运算 | TC-28 | TC 28.1-2、TC 28.1-3、TC 28.1-6、TC 28.1-7、TC 28.2-1、TC 28.2-2、TC 28.2-3、TC 28.3-1、TC 28.3-3  选做：TC Problem 28-1 |
| 18 | 暑期自学 | 串匹配 | TC-32 | TC Ex.32.1-: 2, 3, 4、TC Ex.32.2-: 1, 2, 3, 4、TC Ex.32.3-: 2, 3, 5 |