Syllabus

Week	Topic	Readings
1	Introduction to Programming	Prologue, Chapter 1 (1.1-1.4), Chapter 2 (2.1-2.5)
2	Introduction to Design	Chapter 1 (1.5 - 1.7), Chapter 3, Chapter 4 (4.1 - 4.4)
3	Design with Fixed-Size Data	Chapter 5 (5.1-5.11)
4	Towards Arbitrarily Large Data	Chapter 4 (4.5-4.7), Chapter 6 (6.1-6.2), Chapter 9 (9.3-9.4)
5	Design with Arbitrarily Large Data	Chapter 8 (8.1-8.4), Chapter 9 (9.1-9.6), Chapter 10 (10.1-10.4), Chapter 11 (11.1-11.4)
6	Abstracting Functions	Chapter 12, Chapter 14, Chapter 15
7	Using Abstractions	Chapter 16 (16.1)
8	Design with Abstractions, Lambda	Chapter 16 (16.2-16.7), Chapter 17
9	Practice with Abstractions, Trees	Intermezzo: Scope, Chapter 19 (19.1)
10	Trees	Chapter 19 (19.2)
11	Mutually Recursive Data and Multiple Complex Inputs	Chapter 19 (19.3), Chapter 23
12	Graphs	Chapter 29
13	Accumulators and Generative Recursion	Chapter 25, Chapter 28, Chapter 31
14	Accumulators, Wrap-Up	Chapter 32, Chapter 33

The topics are linked to the detailed weekly lecture schedule listed below. The readings are linked to the on-line version of the textbook.

You are responsible for the readings. The lectures will help you understand the readings and may add pragmatic tips. But both the weekly homeworks and the exams will cover the assigned reading.

As the semester may unfold in unpredictable ways, the syllabus is subject to change. The most likely change concerns the last two weeks, which cover material that varies from semester to semester, and from instructor to instructor. Extra-credit homeworks, if any, will be based on this material.

Detailed Lecture Schedule

Homeworks are due at 6:00pm on the day they are listed in the schedule. They must be submitted via the handin server.

Week 1 Introduction to Programming

09/09	1. Why CS; Arithmetic of numbers, strings, images; Administrivia	
09/10	2. Defining constants, functions; Simple animations	
Week 2	Introduction to Design	
09/14	3. Booleans, conditionals, tests	
09/15	Lab 1 (partners assigned for Friday's homework)	
09/16	4. The Design Recipe	
09/17	5. World Programs	
09/18	Homework due at 6pm	HW 01
Week 3	Design with Fixed-Size Data	
09/21	6. Structure Type Definitions	
09/22	Lab 2	
09/23	7. Custom Structures	
09/24	8. Practice With Structures	
09/25	Homework due at 6pm	HW 02
Week 4	Towards Arbitrarily Large Data	
09/28	9. Union Data	
09/29	Lab 3	
09/30	10. Transition from Fixed-Size to Arbitrarily Large Data	
10/01	11. Self-Referential Data Definitions	
10/02	Homework due at 6pm	HW 03
Week 5	Design with Arbitrarily Large Data	
10/05	12. Lists and Designing Functions on Lists	
10/06	Lab 4	
10/07	13. Lists of Structures	
10/08	14. Practice with Lists	
10/09	Homework due at 6pm	HW 04
10/10	Exam 1 review session (4-6pm)	
Week 6	Abstracting Functions	
Midterm coming up: 10/14 @ 6:00-9:00pm		
10/12	Columbus Day (no classes)	
10/13	Lab 5	
10/14	15. Project Discussion, Exam Review	
10/15	16. Similarities in Functions	
10/16	Homework due at 6pm	HW 05
Week 7	Using Abstractions	
10/19	17. Abstractions	
10/20	Lab 6	
10/21	18. DrRacket-provided Abstractions	
10/22	19. More DrRacket-provided Abstractions	
10/23	Homework due at 6pm	HW 06
Week 8	Design with Abstractions, Lambda	
10/26	20. Scope and Local	
10/27	Lab 7 (new partners assigned for Friday's homework)	
10/28	21. Design Recipe for Abstractions	
10/29	22. Lambda	

10/30	Homework due at 6pm	HW 07

Week 9	Practice with Abstractions, Trees	
11/02	23. Practice with Abstractions, Sets as Lists	
11/03	Lab 8	
11/04	24. Practice with Lambda, Sets as Functions	
11/05	25. Trees	
11/06	Homework due at 6pm	HW 08

Week 10	Trees	
11/09	26. Binary Trees	
11/10	Lab 9	
11/11	Veterans' Day (no classes)	
11/12	27. More Trees	
11/13	Homework due at 6pm	HW 09

Week 11	Mutually Recursive Data and Multiple Complex Inputs	
11/16	28. Mutually Recursive Data	
11/17	Lab 10	
11/18	29. Multiple Complex Inputs	
11/19	30. Practice with Multiple Complex Inputs	
11/20	Homework due at 6pm	HW 10
11/21	Exam 2 review session (4-6pm)	

Week 12	Graphs	
Midterm coming up: 11/23 @ 6:00pm-9:00pm		
11/23	31. Graphs	
11/24	No Lab Today!	
11/25	Thanksgiving break (no classes)	
11/26	Thanksgiving break (no classes)	

Week 13	Accumulators and Generative Recursion	
11/29	Lab 11	
11/30	32. Graphs and Accumulators	
12/02	33. Generative Recursion	
12/03	34. More Generative Recursion, Accumulators	
12/04	Homework due at 6pm	HW 11

Week 14	Accumulators, Wrap-Up	
12/07	35. Accumulators	
12/08	Lab 12	
12/09	36. Practice with Accumulators, Wrap-Up, Homework due at 9pm	HW 12