

CSC 253/453 Fall 2020 Schedule

(As of July. May change based on class/school conditions)

week	lecture	date	topics	reading	assign. (pts)	
1	1	Wed, Aug 26	Essential difficulties of software. Think like a computer.	Brooks:1986, Parnas:CACM85 (3-4)	Homework 1 (20 pts): Software examples of essential difficulties	
2	2	Mon, Aug 31	Module principles	SF 7	Project 1 (50): Ruby iterators: Implement 10 iterators, using map/inject instead of each, and 2 tests per iterator	
	3	Wed, Sep 2	Ruby Enumerable module (individual presentation)	Ruby Enumerable: all?/chunk/collect/each_with_index/find/max/minmax/select/slice_after/zip		
3	4	Wed, Sep 9	Ruby inject, module/mixin. Unit testing.	Ruby Module		
4	5	Mon, Sep 14	In-class work CW1		Project 2 (50): collaboration: testing / reporting / final iterators	
	6	Wed, Sep 16	Reason about programs: control	PAPL 27	Homework 2 (30): Using iterators	
5	7	Mon, Sep 21	Typing data	PAPL 27 (cont'd)		
	8	Wed, Sep 23	Safety and soundness	PAPL 28		
6	9	Mon, Sep 28	Teams. (Pathologies)	Schach 4. (Bateson)		
	10	Wed, Sep 30	Exam1 (100 pts) iterators, static typing			
7	11	Mon, Oct 5	Collaborative project: DVCS		Homework 3 (50): DVCS analysis: modules (filelog, manifest, repos, UI), module tests, acceptance tests	
	12	Wed, Oct 7	Modular structure of complex systems	SF 16		
8	13	Mon, Oct 12	Program families	SF 10	Homework 4 (50): DVCS module guide	
		Wed, Oct 14	Program extension/contraction	SF 14		
9	14	Mon, Oct 19	Haskell basics: type class, map, fold	Lipovaca 3, 6	DVCS group project 1 (50): group design: module guide	
	15	Wed, Oct 21	Haskell types / typeclass	Lipovaca 8		
10	16	Mon, Oct 26	Applicative functors and monoids	Lipovaca 11	Homework 5 (30): software design, Haskell functors	
	17	Wed, Oct 28	Unified software process.	Schach 3, 10-13	DVCS 1 due: initial module guide	
11	18	Mon, Nov 2	DVCS module design (group presentation)			
	19	Wed, Nov 4	Rust type system and error handling	Rust book 9, 10	DVCS 1 due: revised module guide	
12	20	Mon, Nov 9	Exam2 (100) software design, Haskell types			DVCS 2 (100): development
	21	Wed, Nov 11	Rust Iterator trait (individual presentation)	Rust book 13		
13	22	Mon, Nov 16	Design patterns: singleton (logging), conv/config	Olsen Ch. 12,18	Project 3 (50): collaborative: Rust iterators and testing	
	23	Wed, Nov 18	Object class vs Class object, meta-class	Olsen Ch. 12 (repeat) Kay, HOPL93 (optional)		
14	24	Mon, Nov 23	Meta-programming	Olsen Ch. 17	Project 4 (50): Meta programming	
		Wed, Nov 25	Thanksgiving break			
15	25	Mon, Nov 30	Ruby extension (guest lecture Yu Feng)	Ruby 1.8 README.TXT	DVCS 3 (50): beta testing	
	26	Wed, Dec 2	Design patterns: builder, adaptor	Olsen Ch. 9,14.		
16	27	Mon, Dec 7	DVCS project report: Online presentation		Project 5 (50): Ruby extension (time permits, 455 only)	
	28	Wed, Dec 9	Slack			
			final exam (100) cumulative			