

Date	Week	Videos	Duration	Topics	Notes	Slides	Due Dates
05-Jan-22	1	Intro	0:01:23	Self-introduction.	--	--	
		Admin	0:20:29	How course will be administered, and course resources.	--	--	
		1	1:19:23	Course syllabus. Introduction. Static multi-level exits. Dynamic memory allocation.	1.1-1.2	1-21	
		2	1:19:26	Nonlocal transfer. Traditional approaches. Dynamic multi-level exits.	2, 2.1-2.2	22-40	
10-Jan-22	2	3	0:54:41	EHM. Sequels. Dynamic propagation.	2.3-2.10	41-71	
		4	1:02:15	Semicoroutines	3.1	72-109	
17-Jan-22	3	5	0:53:39	Coroutines. Nonlocal exceptions. Memory management	3.2-3.8	110-130	A1: Jan. 19
		6	0:56:17	More complex semicoroutine examples	3.9	131-142	
		7	1:07:52	Full coroutines.	3.10	143-155	
24-Jan-22	4	8	1:03:28	Other languages with coroutines. More exceptions.	3.11-4	156-179	
		9	1:07:24	Concurrency	5.1-5.6	180-196	
		10	1:22:53	Speed-up. Thread creation.	5.7-5.8	197-219	
31-Jan-22	5	11	1:05:42	Termination Synchronization. Divide and conquer. Exceptions. Synchronization and communication during execution. Communication. Critical section. Static variables. Mutual exclusion game.	5.9-5.16	220-237	A2: Feb. 2
		12	0:59:20	Self-testing critical section. Various 2-thread software approaches	5.17-5.18.7	238-252	
		13	1:27:47	N-thread software solutions. Hardware solutions. Lock taxonomy. Spin locks.	5.18.8-6.2	253-278	
07-Feb-22	6	14	0:50:26	Blocking locks. Mutex locks. Implementation. uOwnerLock. Mutex-lock release pattern.	6.3-6.3.1.3	279-295	
		15	0:58:53	Stream locks. Synchronization locks. Implementation. uCondLock. Programming pattern.	6.3.1.4-6.3.2	296-310	
14-Feb-22	7	16	1:00:11	Barrier. Implementation as uBarrier. Binary semaphore. Implementation. Counting semaphore. Implementation. uSemaphore.	6.3.3-6.3.5	311-335	
		17	0:58:37	Lock programming. Precedence graph. Buffering. Unbounded buffer. Bounded buffer.	6.4-6.4.2	336-354	A3: Feb. 16
21-Feb-22	Reading Week						
28-Feb-22	8	18	1:10:16	Lock techniques. Readers and writer problem. Solutions 1-7.	6.4.3-6.4.4	356-384	Midterm: Mar. 2
		19	1:09:02	Concurrent errors.	7	385-410	
		20	1:20:00	Indirect communication. Critical regions. Conditional critical regions. Monitor. Scheduling (synchronization). External scheduling. Internal scheduling.	8-8.4.2	411-428	
07-Mar-22	9	21	1:07:47	Internal scheduling. Readers/writer. Counting semaphores, P, V vs condition, signal, wait.	8.4.2-8.6	429-443	A4: Mar. 9
		22	1:02:41	Monitor types. Java monitor.	8.7-8.8	444-457	
14-Mar-22	10	23	1:00:02	Direct communication. Task. Scheduling (external, internal). Accepting the destructor.	9-9.2	458-477	
		24	0:39:35	How to turn the general monitor into the uC++ monitor. Increasing concurrency on the server side. Internal buffer. Administrator.	9.3-9.3.1.2	478-485	
21-Mar-22	11	25	1:07:35	Increasing concurrency on the client side.	9.3.2-9.3.2.4	486-498	A5: Mar. 23
		26	0:27:30	Complex future access.	9.3.2.4	499-507	
28-Mar-22	12	27	1:30:57	Optimization.	10	508-538	
		28	0:36:14	Other approaches.	11-11.1.4	539-562	
04-Apr-22	13	29	0:47:24	Other approaches.	11.1.5-11.3	563-578	A6: Apr. 5
		30	1:22:37	Other approaches.	11.4-11.6	579-619	NO LATES!