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Data Structures and Programming C++

The following table maps course session dates, lesson topics, text references, and content links for CIT-245: Data Structures and Programming C++

Zoom meeting link








This course is held via live zoom connection with Eric Darsow at the Technology Rediscovery shop in Swissvale, PA.

[Zoom into Technology Rediscovery shop](#)


MtngID: 614 961 8122

Ph:+1 646-558-8656




Course	FA20 Est.	Wk.	Sess.	Session description	Resources	Language objectives	Out-of-class work
CIT-245	MON 17-AUG-2020	1	1	Syllabus and course overview CIT-245 Syllabus Fall 2020			For week 1, please choose an area of interest to you, choose a specific example of that area--such as the settings for your

Course	FA20 Est.	Wk.	Sess.	Session description	Resources	Language objectives	Out-of-class work
CIT-245	WED 19-AUG-2020		2	<p>Deepening basic knowledge of Data Structures</p> <p>Create customized notes on each of our core structures on the buttons inside this module</p> <p> Mod 1: Arrays, Lists, Maps, & Trees</p>			<p>favorite game, your movie collection, the way folks are organized at your work, etc. Use the symbols on our data structures posters to create your own diagram of your chosen object/process.</p> <p>Remember, we might have nested structures, such as a list of smaller lists, or a tree filled with lists of items within each node.</p> <p>Take a photo/scan your diagram and upload it to the module 1 folder in our shared drive linked below, name your file your FIRST NAME only.</p> <p> Root of DS cloud MS OneDrive </p>
CIT-245	MON 24-AUG-2020	2	1	<ol style="list-style-type: none"> 1. Register your Unique public identifier and private codename with Eric 2. Create a repl.it account and C++ repl 3. Post a mapping of your public ID to the URL of your C++ repl in our tracker 	<p> Team Optimizer specs</p> <p> Mod 1: Arrays, Lists, Maps, & Trees</p>		<p> Team Optimizer specs</p> <p> OneDrive for flow-charts</p>
CIT-245	WED		2	1. Coursekeeping:			

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	26-AUG-2020			Slack channel 2. NOC List Clip 3. Working with lists and maps in C++ 4. Team optimizer project 5. Socrative quiz			
CIT-245	MON 31- AUG-2020/td>	3	1	List and Map project 1. Clarify naming triumviarte 2. Candidate Mapping project overview 3. Flow charting logic 4. Writing in functions 5. Code together on maps	Naming Triumvirate Guide Team Optimizer specs OneDrive for flow-charts	1. Organize code into functions, and call those functions strategically to reduce repeat code 2. Write to a vector object and read from inputted values 3. Create a map object and write keys and extract values using keys	
CIT-245	WED 2-SEP-2020		2				

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CIT-245	MON MON-7SEP-2020	4	1	NO CLASS-LABOR DAY	<p>Class-based C++</p> 		Please have your team optimizer in a fully-baked form by Sunday at Morning light for instructor review and planning for our next phase of the course.
CIT-245	WED 19-FEB-2020		2	<p>Class-based C++</p> <p>Stroustrup Chapter 9: Classes, etc. is our guide for this session</p>			
CIT-245	MON 14-SEP-2020	5	1	<p>References and pointers</p>	Exploring function call essentials in chapter 8, sections 4 and 5	Write code that demonstrate the use of pointers to objects on the free store	<ol style="list-style-type: none"> 1. Fully-bake your team optimizer project if already done, and make an entry in the "ready for instructor review" column 2. Study sections 8.4 and 8.5. and 17.3 and 17.4, and 17.9: Try typing in and tinkering with examples from the book 3. Easy TODO: Bring a set of items "collectible" to the zoom meeting and prepare to search through them, and model in a C++ class. (e.g. a stack of books, kitchen itensils, food items, coins, pens & pencils)
CIT-245	WED 16-SEP-2020		2	<p>Finish our pass-by-pointer example for functions</p> <p>Begin algorithms</p>			

4. For Monday: Please create a simple program that includes a object model of your chosen item and demonstrates creating one or more instances of your model and

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							manipulating its member variables. See Chapter 9: Technicalities, Classes, etc.
CIT-245	MON 21-SEP-2020	6	1	Object design and algorithm intro	 Sorting visualization  Bubble sort on Wikipedia	<p>Create a model of an object in C++ with public and private members and a constructor</p> <p>Conceptualize a sorting algorithm as a logical sequence of steps</p>	<p>STEP 1: Create a class representing your chosen collectible object that includes private members and public accessor methods and a constructor</p> <p>STEP 2: Use your class in a simple program and create a vector of several of your objects for use in our sorting exercise next week.</p> <p>STEP 3: Demonstrate as we did in class on Wednesday, that you in fact have multiples different objects with different member variables.</p> <p>STEP 4: Begin the design process by tinkering with the bubble sort visualization linked at left, and relying only on pseudocode, not other folks' C++</p>
CIT-245	WED 23-SEP-2020		2				<p>IDEA: Investigate (try in documentation, not stack overflow) how to randomly create values for the various objects in your vector.</p> <p>For Monday: please setup an account on GitHub.com</p>  Setting up GitHub for your programs
CIT-245	MON 28-SEP-2020	7	1	Tree: Explored			
CIT-245	WED		2				

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	30-SEP-2020						
CIT-245	MON 5-OCT-2020	8	1	Trees & DS General Mini Project			
CIT-245	WED 7-OCT-2020		2				
CIT-245	MON 12-OCT-2020	9	1	Algorithms: Using sorting and searching tools			
CIT-245	WED 14-OCT-2020		2				
CIT-245	MON 19-OCT-2020	10	1	Algorithms: Writing your own			
CIT-245	WED 21-OCT-2020		2				
CIT-245	MON 26-OCT-2020	11	1	Algorithm project worktime		11.L.1: 11.L.2:	
CIT-245	WED 28-OCT-2020		2				

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CIT-245	MON 2-NOV-2020	12	1	Comparing algorithm efficiency			
CIT-245	WED 4-NOV-2020		2				
CIT-245	MON 9-NOV-2020	13	1	C++ On Hardware			
CIT-245	WED 11-NOV-2020		2				
CIT-245	MON 16-NOV-2020	14	1		Culminating Project: Design		
CIT-245	WED 18-NOV-2020		2				
CIT-245	MON 23-NOV-2020	-	-		TURKEY DAY BREAK - NO CLASS ENTIRE WEEK		
CIT-245	WED 25-NOV-2020		-				
CIT-245	MON 30-NOV-2020	15	1	Culminating Project: Coding			
CIT-245	WED 2-DEC-2020		2				

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CIT-245	MON 7-DEC-2020	16	1	Culminating Project: Debugging			
CIT-245	WED 9-DEC-2020		2	"FINAL EXAM" Session Please bring a fully-baked final project ready to share on your repl!			

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