

COMP151 Knowledge Areas

Topic	Sub-Topic	Chapters Covered
1 Data Types (Objects, Values, and Operations)	a Integers	2+
	b Floating Point Numbers	2+
	c Strings/Characters	2+
	d Booleans	8
2 Expressions and Substitution Semantics	a Variable Evaluation - Identifiers	2+
3 Statements and Side-Effect/State-based Semantics (I/O, Mutation, & Control)	a I/O: Read & Write from terminal and files	2
	b Variables (mutation): Declaration, Initialization, Assignment	2+
	c Conditionals (control): if, if...else, if...else if...else	8
	d Loops (control): for, while	7,14
	e Exceptions (control): throw, Try..catch, with	19
4 Functions/Procedures	a Definition: return value, side-effects	12
	b Application: For value (functional) , for effect (stateful)	2+
5 Data Structures, Classes & Compound Data	a Object Data & Methods	5
	b Tuples	6
	c Dynamic Array-List & Sequences	6
	d Dictionary	11
6 Design & Problem Solving	a Iteration and Accumulation	7
	b Modules and Libraries	4
	c Nested Expressions & Statements	7-9
	d Functional Composition (helper/auxiliary functions)	12
	e Functional Abstraction	12
	f Data Abstraction and Objects	5,20
7 Debugging and Troubleshooting	a Print-statement based debugging	3
	b Debuggers and Steppers	
	c Unit Tests & Testing Generally	18
	d Syntax, Run-time Errors, and Compiler/Interpreter Messages	3
8 Professional Knowledge (Table 4.2 from CC2020 (pg 50))	a Analytical and Critical Thinking	All
	b Collaboration and Teamwork	
	c Ethical and Intercultural Perspectives	
	d Mathematics and Statistics	
	e Multi-Task Prioritization and Management	
	f Oral Communication and Presentation	
	g Problem Solving and Troubleshooting	
	h Project and Task Organization and Planning	
	i Quality Assurance / Control	
	j Relationship Management	
	k Research and Self-Starter/Learner	
	l Time Management	
	m Written Communication	