DAG

Sl	Module	Competency Unit	Elements	Schedule Date	Actual Date	Done
1	Module03	STCESADJ2EE 301	**1.Introduction to Computers, Programs, and Java** Java, the World Wide Web, and Beyond 10 1.6 The Java Language Specification, API, JDK, and IDE 11 1.7 A Simple Java Program 12 1.8 Creating, Compiling, and Executing a Java Program 15 1.9 Programming Style and Documentation 18 1.10 Programming Errors 20 1.11 Developing Java Programs Using NetBeans 23 1.12 Developing Java Programs Using Eclipse	13/08/2018	18/08/2018	☐
2	Module03	STCESADJ2EE 301	**2. Elementary Programming** Introduction 34 2.2 Writing a Simple Program 34 2.3 Reading Input from the Console 37 2.4 Identifiers 39 2.5 Variables 40 2.6 Assignment Statements and Assignment Expressions 41 2.7 Named Constants 43 2.8 Naming Conventions 44 2.9 Numeric Data Types and Operations 44 2.10 Numeric Literals 48 2.11 Evaluating Expressions and Operator Precedence 50 2.12 Case Study: Displaying the Current Time 52 2.13 Augmented Assignment Operators 54 2.14 Increment and Decrement Operators	14/08/2018	27/08/2018	
3	Module03	STCESADJ2EE 301	**3. Selections** 3.2 boolean Data Type 76 3.3 if Statements 78 3.4 Two-Way if-else Statements 80 3.5 Nested if and Multi-Way if-else Statements 81 3.6 Common Errors and Pitfalls 83 3.7 Generating Random Numbers 87 3.8 Case Study: Computing Body Mass Index 89 3.9 Case Study: Computing Taxes 90 3.10 Logical Operators 93 3.11 Case Study: Determining Leap Year 97 3.12 Case Study: Lottery 98 3.13 switch Statements 100 3.14 Conditional Expressions 103	16/08/2018	28/08/2018	
4	Module03	STCESADJ2EE 301	**4.Mathematical Functions, Characters, and Strings** Introduction 120 4.2 Common Mathematical Functions 120 4.3 Character Data Type and Operations 125 4.4 The String Type 130 4.5 Case Studies 139 4.6 Formatting Console Output	18/08/2018	29/08/2018	
5	Module03	STCESADJ2EE 301	**5. Loops** Introduction 158 5.2 The while Loop 158 5.3 The do-while Loop 168 5.4 The for Loop 170 5.5 Which Loop to Use	27/08/2018	30/08/2018	
6	Module03	STCESADJ2EE 301	**6. Loops** Nested Loops 176 5.7 Minimizing Numeric Errors 178 5.8 Case Studies 179 5.9 Keywords *break* and *continue* 184 5.10 Case Study: Checking Palindromes 187 5.11 Case Study: Displaying Prime Numbers	28/08/2018	01/09/2018	
7	Module03	STCESADJ2EE 302	**7.Methods** Introduction 204 6.2 Defining a Method 204 6.3 Calling a Method 206 6.4 void Method Example 209 6.5 Passing Arguments by Values 212 6.6 Modularizing Code 215 6.7 Case Study: Converting Hexadecimals to Decimals 217 6.8 Overloading Methods 219 6.9 The Scope of Variables	29/08/2018	05/09/2018	
8	Module03	STCESADJ2EE 302	**Single-Dimensional Arrays** 7.12 The Arrays Class 270 7.11 Sorting Arrays 269 7.10 Searching Arrays 265 7.9 Variable-Length Argument Lists 264 7.8 Case Study: Counting the Occurrences of Each Letter 261 7.7 Returning an Array from a Method 260 7.6 Passing Arrays to Methods 257 7.5 Copying Arrays 256 7.4 Case Study: Deck of Cards 254 7.3 Case Study: Analyzing Numbers 253 Array Basics 246 7.13 Command-Line Arguments	30/08/2018	06/09/2018	
9	Module03	STCESADJ2EE 302	**Multidimensional Arrays** Introduction 288 8.2 Two-Dimensional Array Basics Processing Two-Dimensional Arrays 291 8.4 Passing Two-Dimensional Arrays to Methods 293 8.5 Case Study: Grading a Multiple-Choice Test 294 8.6 Case Study: Finding the Closest Pair	01/09/2018	08/09/2018	
10	Module03	STCESADJ2EE 303	**10.Objects and Classes** 1 Introduction 322 9.2 Defining Classes for Objects 322 9.3 Example: Defining Classes and Creating Objects 324 9.4 Constructing Objects Using Constructors 329 9.5 Accessing Objects via Reference Variables 330 9.6 Using Classes from the Java Library 334 9.7 Static Variables, Constants, and Methods 337 9.8 Visibility Modifiers 342	05/09/2018	09/09/2018	
11	Module03	STCESADJ2EE 303	**11. Objects and Classes** Data Field Encapsulation 344 9.10 Passing Objects to Methods 347 9.11 Array of Objects 351 9.12 Immutable Objects and Classes 353 9.13 The Scope of Variables 355 9.14 The this Reference 356	06/09/2018	10/09/2018	
12	Module03	STCESADJ2EE 303	**12. Object-Oriented Thinking** Introduction 366 10.2 Class Abstraction and Encapsulation 366 10.3 Thinking in Objects 370 10.4 Class Relationships 373 10.5 Case Study: Designing the Course Class 376 10.6 Case Study: Designing a Class for Stacks 378 10.7 Processing Primitive Data Type Values as Objects 380	08/09/2018	12/09/2018	
13	Module03	STCESADJ2EE 303	**13. Object-Oriented Thinking** 10.8 Automatic Conversion between Primitive Types and Wrapper Class Types 383 10.9 The BigInteger and BigDecimal Classes 384 10.10 The String Class 386 10.11 The StringBuilder and StringBuffer Classes 392	09/09/2018	13/09/2018	
14	Module03	STCESADJ2EE 303	**14.Inheritance and Polymorphism** Introduction 410 11.2 Superclasses and Subclasses 410 11.3 Using the super Keyword 416 11.4 Overriding Methods 419 11.5 Overriding vs. Overloading 420 11.6 The Object Class and Its toString() Method 422 11.7 Polymorphism 423 11.8 Dynamic Binding 424 11.9 Casting Objects and the instanceof Operator 427 11.10 The Object's equals Method 431	10/09/2018	16/09/2018	
15	Module03	STCESADJ2EE 303	**15. Exception Handling and Text I/O** 12.3 Exception Types 455 12.4 More on Exception Handling 458 12.5 The finally Clause 466 12.6 When to Use Exceptions 467 12.7 Rethrowing Exceptions 468 12.8 Chained Exceptions 469 12.9 Defining Custom Exception Classes 470	12/09/2018		
16	Module03	STCESADJ2EE 303	**16.Exception Handling and Text I/O** 12.10 The File Class 473 12.11 File Input and Output 476 12.12 Reading Data from the Web 482 12.13 Case Study: Web Crawler 484	13/09/2018		
17	Module03	STCESADJ2EE 304	**17. Abstract Classes and Interfaces** 13.2 Abstract Classes 496 13.3 Case Study: the Abstract Number Class 501 13.4 Case Study: Calendar and GregorianCalendar 503 13.5 Interfaces 506 13.6 The Comparable Interface 509 13.7 The Cloneable Interface 513 13.8 Interfaces vs. Abstract Classes 517	15/09/2018		
18	Module03	STCESADJ2EE 304	**18. Binary I/O** 1 Introduction 678 17.2 How Is Text I/O Handled in Java? 678 17.3 Text I/O vs. Binary I/O 679 17.4 Binary I/O Classes 680 17.5 Case Study: Copying Files 691 17.6 Object I/O 692 17.7 Random-Access Files 697	16/09/2018		
19	Module03	STCESADJ2EE 304	**19. Recursion** Introduction 706 18.2 Case Study: Computing Factorials 706 18.3 Case Study: Computing Fibonacci Numbers 709 18.4 Problem Solving Using Recursion 712 18.5 Recursive Helper Methods 714 18.6 Case Study: Finding the Directory Size 717 18.7 Case Study: Tower of Hanoi 719 18.8 Case Study: Fractals 722 18.9 Recursion vs. Iteration 726	17/09/2018		
20	Module03	STCESADJ2EE 304	**20. Generics** 19.2 Motivations and Benefits 738 19.3 Defining Generic Classes and Interfaces 740 19.4 Generic Methods 742 19.5 Case Study: Sorting an Array of Objects 744 19.6 Raw Types and Backward Compatibility 746 19.7 Wildcard Generic Types 747 19.8 Erasure and Restrictions on Generics 750	18/09/2018		
21	Module03	STCESADJ2EE 304	**21.Lists, Stacks, Queues, and Priority Queues** 20.2 Collections 762 20.3 Iterators 766 20.4 Lists 767 20.5 The Comparator Interface 772 20.6 Static Methods for Lists and Collections 773 20.7 Case Study: Bouncing Balls 777 20.8 Vector and Stack Classes 781 Contents xvii 20.9 Queues and Priority Queues 783	19/09/2018		
22	Module03	STCESADJ2EE 305	**22. Sets and Maps** 21.2 Sets 798 21.3 Comparing the Performance of Sets and Lists 806 21.4 Case Study: Counting Keywords 809 21.5 Maps 810 21.6 Case Study: Occurrences of Words 815 21.7 Singleton and Unmodifiable Collections and Maps	20/09/2018		
23	Module03	STCESADJ2EE 305	**Developing Efficient Algorithms** Measuring Algorithm Efficiency Using Big *O* Notation 822 22.3 Examples: Determining Big *O* 824 22.4 Analyzing Algorithm Time Complexity 828 22.5 Finding Fibonacci Numbers Using Dynamic Programming 831 22.6 Finding Greatest Common Divisors Using Euclid's Algorithm 833 22.7 Efficient Algorithms for Finding Prime Numbers 837 22.8 Finding the Closest Pair of Points Using Divide-and-Conquer 843	22/09/2018		
24	Module03	STCESADJ2EE 305	**Sorting** 23.2 Insertion Sort 862 23.3 Bubble Sort 864 23.4 Merge Sort 867 23.5 Quick Sort 870 23.6 Heap Sort 874 23.7 Bucket Sort and Radix Sort 881 23.8 External Sort 883	23/09/2018		
25	Module03	STCESADJ2EE 305	**24.Implementing Lists, Stacks, Queues, and Priority Queues** 24.2 Common Features for Lists 896 24.3 Array Lists 900 24.4 Linked Lists 906 24.5 Stacks and Queues 920 24.6 Priority Queues 924	24/09/2018		