Cs902	1. Input/output instruction. 2. Variables. Types. 3. Arithmetic expressions. 4. Accumulations. 5. Conditional Statements. If..else. 6. Boolean Expressions and operators such as And, or 7. Select Case Statement. 8. Nested IF else. 9. Nested Select Case. 10. Loops. 11. For loops. 12. While loops. 13. Do loops 14. Nested loops. 15. Functions. 16. Passing Argument to functions by value. 17. Passing arguments to functions by reference. 18. Arrays. 19. Searching Arrays. 20. Updating arrays.
Cs939 (C ++)	1. Creating Projects using Visual Studio. 2. Compilation to create .exe files. 3. Input/output instructinos. 4. Data Types and the memory reserved for each data type. 5. Floating point operations. Type casting from one to another type. 6. The cin Object 7. 3.2 Mathematical Expressions 8. 3.3 Data Type Conversion and Type Casting 9. 3.4 Overflow and Underflow 10. 3.5 Named Constants 11. 3.6 Multiple and Combined Assignment 12. 3.7 Formatting Output 13. 3.8 Working with Characters and Strings 3.9 Using C-Strings 14. 3.10 More Mathematical Library Functions 15. Difference between C-Strings and String class. 16. How the strings are stored in memory. 17. Formatting output. **18. Conditional Statements** 19. If conditions. 20. If else. 21. Switch statements. **22. Looping** 23. For loops, while loops, do loops. 24. Scope of variables inside the loops. 25. Breakding out of the loops. 26. Storing data in the text file. 27. Functions. 28. Passing data by reference and by value.

29. Returning data from the functions.
30. Function prototypes.
31. Local variables.
32. **Introduction into classes.**
33. Detailed explanation about primitive data types and classes and objects.
34. Creating and using objects.
35. Member functions for classes.
36. Constructors.
37. Destructors.
38. Private member functions
39. Passing objects to functions.
40. Object composition.
41. Structures.
42. **Arrays**:
43. Two dimensional arrays.
44. Passing arrays to functions.
45. Vectors
46. Array of Objects.
47. Searching and sorting.
48. Sorting array of objects.
49. Searching Array of objects.
50. **Pointers:**
51. Pointers and Address operators.
52. Pointer variables.
53. Relationship between pointers and arrays.
54. Pointers and the Address Operator
55. The Relationship Between Arrays
56. and Pointers
57. Pointer Arithmetic
58. Initializing Pointers
59. Comparing Pointers
60. Pointers as Function Parameters
61. Pointers to Constants and Constant
62. Pointers
63. Pointers and the Address Operator
64. Pointer Variables
65. The Relationship Between Arrays
66. and Pointers
67. Pointer Arithmetic
68. Initializing Pointers
69. Comparing Pointers
70. Pointers as Function Parameters
71. Pointers to Constants and Constant
72. Pointers
73. **MORE ABOUT CLASSES:**
74. The this Pointer and Constant
75. Member Functions

	76. Static Members 77. Friends of Classes 78. Memberwise Assignment 79. Copy Constructors 80. Operator Overloading 81. Type Conversion Operators 82. Convert Constructors 83. Aggregation and Composition 84. Protected Members and Class 85. Access 86. Constructors, Destructors, **87. File HANDLING:** 88. Input and Output Streams 89. More Detailed Error Testing 90. Member Functions for Reading and 91. Writing Files 92. Binary Files 93. Creating Records with Structures 94. Random-Access Files 95. Opening a File for Both Input 96. and Output
Cs990	1. Installing elipse/netbeans. 2. Creating projects for java and running them. 3. Brief tour of IDE. 4. Data types in Java. 5. Difference between Variable and the object the variable points to. 6. Basic input/output. 7. Java string class. 8. Conditional statements. 9. Comparing string objects. 10. Parsing text to numbers. 11. Loops 12. Introduction to file input/output. 13. Passing variables by reference/ by value. Passing objects by reference. Difference between passing primitive data types and objects to functions. **14. Classes:** 15. Classes and Objects 16. Instance Fields and Methods 17. Constructors 18. Overloading Methods and 19. Constructors 20. Scope of Instance Fields 21. Packages and import Statements **22. GUI** 23. Introduction 24. Creating Windows

	25. Equipping GUI Classes with a main 26. Method 27. Layout Managers 28. Radio Buttons and Check Boxes 29. Borders **30. ARRAYS** 31. Introduction to Arrays 32. Processing Array Elements 33. Passing Arrays as Arguments to 34. Methods 35. Some Useful Array Algorithms and 36. Operations 37. Returning Arrays from Methods 38. String Arrays 39. Arrays of Objects **40. MORE ON CLASSES:** 41. Static Class Members 42. Passing Objects as Arguments to 43. Methods 44. Returning Objects from Methods 45. The toString Method 46. Writing an equals Method 47. Methods That Copy Objects 48. Static Class Members 49. Passing Objects as Arguments to 50. Methods 51. Returning Objects from Methods 52. The toString Method 53. Writing an equals Method 54. Methods That Copy Objects **55. TEXT PROCESSING.** 56. Introduction to Wrapper Classes 57. Character Testing and Conversion with 58. the Character Class 59. More String Methods 60. The StringBuilder Class 61. Tokenizing Strings 62. Introduction to Wrapper Classes 63. Character Testing and Conversion with 64. the Character Class 65. More String Methods 66. The StringBuilder Class 67. Tokenizing Strings **68. INHERITANCE:** 69. Introduction to Wrapper Classes 70. Character Testing and Conversion with 71. the Character Class 72. More String Methods

	73. The StringBuilder Class
	74. Tokenizing Strings
	75. Polymorphism
	76. Abstract Classes and Abstract
	77. Methods
	78. Interfaces
	79. EXCEPTIONS:
	80. Handling Exceptions
	81. Throwing Exceptions
	82. Advanced Topics: Binary Files, Random
	83. Access Files, and Object Serialization
	84. ADVANCED GUI.
	85. The Swing and AWT Class Hierarchy
	86. Read-Only Text Fields
	87. Lists
	88. Combo Boxes
	89. Displaying Images in Labels and
	90. Buttons
	91. Mnemonics and Tool Tips
	92. File Choosers and Color Choosers
	93. Menus
	94. More about Text Components: Text
	95. Areas and Fonts
	96. Sliders
	97. Look and Feel
CS936	**1. RECURSION:**
	2. Introduction to Recursion
	3. Solving Problems with Recursion
	4. Examples of Recursive Methods
	5. GENERICS:
	6. Introduction to Generics
	7. Writing a Generic Class
	8. Passing Objects of a Generic Class
	9. to a Method
	10. Writing Generic Methods
	11. Constraining a Type Parameter
	12. in a Generic Class
	13. Inheritance and Generic Classes
	14. Defining Multiple Type Parameters
	15. Generics and Interfaces
	16. Erasure
	17. Restrictions on the Use of Generic
	18. Types
	19. COLLECTIONS:
	20. Introduction to the Java Collections
	21. Framework
	22. Lists
	23. Sets

	24. Introduction to the Java Collections 25. Framework 26. Lists **27. ARRAY BASED LIST** 28. Introduction to the Java Collections 29. Framework 30. Lists 31. Sets 32. Creating a Generic Array-Based List 33. Writing Iterator Classes and Iterable 34. Lists **35. LINKED LIST** 36. Introduction to Linked Lists 37. Operations on Linked Lists 38. Doubly-Linked and Circularly-Linked Lists 39. Recursion on Linked Lists **40. STACKS and QUEUES.** 41. Stacks and Their Applications 42. Array Implementation of Stacks 43. Linked Implementation of Stacks 44. Queues and Their Applications 45. Array Implementation of Queues 46. Linked List Implementation of Queues 47. Generic Implementation of Stacks and 48. QueuesQueues and Breadth First Search **49. BINARY TREES.**