1. Software development life cycle
2. How programming languages support good software development through their features
3. Iterative enhancement
4. Testing strategies and methodology
5. Reasons why we study programming languages
6. Languages based on application domains
7. Programming language design historical perspective
8. Attributes of a good language
9. Types of programming languages (domains, paradigms)
10. Machine architecture and its influence on programming language design
11. Types of language translators
12. The virtual machine concept
13. The compilation process
   a. Lexical analysis
   b. Syntactic analysis
   c. Semantic analysis
   d. Optimization
14. An example of orthogonal design in a programming language.
15. An example of a pre-processor command.
16. Describe the Java translation process. Is it a pure interpretation model, a standard compiler model, or a hybrid model? Why?
17. Give an example of how the language characteristic reliability can be at odds (i.e. a design tradeoff) with the cost of execution.
18. Give an example of language’s support for process abstraction. Give an example of language’s support for data abstraction.
19. Describe the fetch-execute cycle as an algorithm.
20. Describe the impact that the von Neumann architecture had on how programming languages were initially developed. What are the features of that architecture?
21. What is the von Neumann bottleneck?
22. Identify some of the contributions the ALGOL 60 language had on the development of future languages.

23. What was the key design consideration for FORTRAN?

24. Why was ALGOL developed? What was its main goal?

25. Why didn’t ALGOL become the dominant programming language of its day?

26. What was BNFs contribution to language development? Identify the advantage(s) and disadvantage(s) of using BNF.

27. What was the key difference between a language like FORTRAN and LISP?

28. How was the target audience for COBOL different than other languages of its day?

29. IBM spent countless person-years and money developing PL/I. Why? Was it a success? Why or why not?

30. Why was C developed? What may it different from other high-level languages up to that point in time?

31. Pascal dominated as a language in which to teach programming. Why? What was its success in industry? Was it a success? Why or why not?