



Course Name	Fundamentals of Programming
References	<ol style="list-style-type: none"><li>1. Deitel, Harvey M., and Paul J. Deitel. C: how to program. Prentice-Hall, Inc., 1992.</li><li>2. Ritchie, Dennis M., Brian W. Kernighan, and Michael E. Lesk. The C programming language. Englewood Cliffs: Prentice Hall, 1988.</li></ol>
Course instructor	Dr. Behrooz Nasihatkon
Syllabus	<ol style="list-style-type: none"><li>1. Introduction to Computer Programming and Applications,</li><li>2. Basic Computer Architecture</li><li>3. Binary numbers, Integer number representation, Hex numbers, unsigned integer, sign bit, one's complement, two's complement</li><li>4. Floating point representation</li><li>5. Introduction to algorithms and flowcharts</li><li>6. More on flowcharts</li><li>7. Introduction to C</li><li>8. Arithmetics in C</li><li>9. Decision Making</li><li>10. Loops</li><li>11. printf &amp; scanf</li><li>12. Operators and precedence</li><li>13. Switch-case</li><li>14. Logical Operators</li><li>15. C Functions</li><li>16. C Standard Library</li><li>17. Math functions</li><li>18. Writing functions</li><li>19. Function prototypes</li><li>20. C preprocessor</li><li>21. Random number generation</li><li>22. variable scopes, recursion, call stack</li><li>23. static variables</li><li>24. Tower of Hanoi</li><li>25. C arrays</li><li>26. C characters, ASCII coding, C strings</li><li>27. Passing arrays to functions</li><li>28. Sorting arrays, bubble sort</li><li>29. Searching arrays, linear and binary search</li><li>30. 2D arrays</li></ol>



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|  | <ol style="list-style-type: none"><li>31. Matrix multiplication</li><li>32. ND arrays</li><li>33. Introduction to Pointers</li><li>34. Pointers and Arrays</li><li>35. Pointer arithmetic</li><li>36. Arrays of pointers</li><li>37. pointer to functions</li><li>38. Character &amp; String processing</li><li>39. Streams</li><li>40. C structures</li><li>41. Bit Operations</li><li>42. File processing</li><li>43. Dynamic memory allocation</li></ol> |
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