**General Information:**

**Name of Course: programming 1.**

**Course Code:**

**Semester:** 1nd

**Number of Credits:**

**Allotment of Hours per Week:**

**Evaluation:**

**Prerequisites: -**

**Instructors:**

**Introduction, Learning Outcomes**

The main goal of the course is to teach the students the basic programming skills using the framework of the C programming language.

**General Course Description and Main Content:**

Fundaments of C language, functions and variables, data types, standard input / output, expressions, control statements, recursion, arrays and strings, pointers, pointer arrays, user-defined data types, structures, structure arrays, C preprocessor, dynamical memory handling, precedences and associativity of arithmetic operations, file handling, error search and correction, high level data structures, parameters of function main, ANSI C functions, Gitlab

**Methodology:**

**Schedule:**

1. “Hello world”, compile and execution of C programs, the use of function printf and scanf, variables and functions, writing a simple function, void, return, passing parameters according to their values, block and function, role of “static”
2. Writing programs with control statements, if, else, switch, while, do-while, for, break, continue
3. Loop, branch, sequence, composed control structures and expression, simple algorithms implemented in C language, use of mathematical operations, initialization, comparison, increment, decrement, type conversion, basic data types, size of variables, overflow
4. Recursion, tasks to solve
5. Use of arrays and functions, passing an array to a function, tasks on strings, practising, decomposition of a program into several files
6. Creating a number array, reading numbers in an array, printing the content of the array, indexes, simple programs with pointers, pointer dereference, cast, NULL pointer, pointers and arrays, changing the variable values with functions
7. **Test 1**
8. fall break
9. solving the tasks of test 1
10. Recursion, dynamic data structures, strings, creating texts, standard functions for string handling, writing standard functions for string handling with pointers, tasks to solve on string handling
11. defining a structure, reading data into the structure and printing them on the screen, embedding structure into another one, pointers for structures, creating new data types, structure arrays, pointers to pointers, pointer arrays
12. macros in C programs, constants as macros, malloc, calloc, realloc, free
13. open a text file, printing into a text file, reading textfiles, fscanf, reading a text file according to its format, the use of stdin stdout stderr files in case of console program, copying a file into another one
14. Parameters of function main, self referential data structures
15. **Test 2.**

Correction period: Januar (2020)

**Attendance:**

**Evaluation + Grading**

**Grading scale**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Numeric Grade: | 5 | 4 | 3 | 2 | 1 |
| Evaluation in points: |  |  |  |  |  |

**Students with special needs:**

**Required Reading and other Materials will be equivalent to:**