Department of Computer Applications
National Institute of Technology Tiruchirappalli

1. Course Outline			
Course Title	PROGRAMMING IN C LAB		
Course Code	CA 701		
Department	CA	**No. of Credits**	2
Pre-requisites Course Code	-	**Faculty Name**	Dr.Michael Arock Dr.R.Eswari
Class Committee Chairperson	Dr.V.Gayathri		
E-mail	michael@nitt.edu eswari@nitt.edu	**Telephone No.**	0431-2503736 0431-2503744
Course Type	Core Laboratory Course		

2. Course Overview

The Programming in C Laboratory is to make students well versed in C language. The problems given are to be solved by, first, writing the pseudo-codes and then corresponding C programs. This course teaches how to implement a C code and how to locate and remove errors. The degree of complexity of problems increases from small to big steadfast.

3. Course Objectives

- To provide an arena for problem solving by writing pseudo-code.
- To understand the syntax and semantics of C constructs.
- To learn how to write an error-free C code for the pseudo-code developed.

4. Course Outcomes (CO)

- Ability to develop a logic for the given problem.
- Ability to express the logic in the form of pseudo-code.
- Ability to implement pseudo-code as C code.
- Ability to execute a C code and get the output.

Course Outcome (CO)	Aligned Programme Outcome (PO)											
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12
Ability to develop a logic for the given problem.	M	B	B	B	M	B	B	S	B	B	B	M
Ability to express the logic in the form of pseudo-code.	M	S	M	M	M	S	M	S	M	M	B	M
Ability to implement pseudo-code as C code.	M	M	S	M	S	M	S	B	M	M	B	M
Ability to execute a C code and get the output.	M	M	M	S	M	M	M	B	M	M	B	M

S = 0.6 M = 0.4 B = 0.0

6. Course Teaching and Learning Activities

Week	Topics covered
1.	Find average pass marks of a class in a subject and do primality testing
2.	Find ${}^{n}C_{r}$ without using functions and compute sin(x) without library function call
3.	Reverse a number of any number of digits and check if a number is Armstrong number
4.	Perform base conversion (all twelve conversions)
5.	Perform insertion sort, bubble sort and selection sort
6.	Perform linear and binary search(both recursive and non-recursive)
7.	Perform matrix multiplication and find row totals for all rows, column totals for all columns and cell total for all cells together

Week	Topics covered
8.	Perform string manipulations (finding string length, string copy and concatenation) without library function call, but using pointers
9.	Perform insertion into and deletion from a linked list
10.	Perform payroll processing using files

The assessment in this course has practical component only. The assessment in practical component has periodical evaluations, record writing, and end semester examination whose details are given in Table 8. The assessment in Practical will be done for a total of 100 marks.

S.No	Mode	Marks
1.	Regular lab exercises evaluation and Lab record preparation	50
2.	Internal exam	25
3.	External exam	25
	Total	100

8. Course Exit Survey (mention the ways by which the feedback about the course is assessed and indicate the attainment level)

- The students through the class rep may give their feedback at any time to the course co-ordinator which will be duly addressed.
- The students may also give their feedback during Class Committee meeting.
- 'Course Outcome Survey' form will be distributed on the last working day to all the students and the feedback on various rubrics will be analyzed.
- The COs will be computed after arriving at the final marks.

9. Course Policy (including plagiarism, academic honesty, attendance, etc.)

- **Plagiarism**
  The students are expected to come out with their original algorithm design and code for problems given during the class work, home work, term project, laboratory exercises, and tests/examinations. If found to copy from internet/other students, zero marks will be assigned and disciplinary action will be taken.
- **Attendance**
  100% is a must. However, relaxation upto 15% will be given for leave on emergency requirements (medical, death, etc.) and representing institute events.

- **Academic Honesty**
  i) Possession of any electronic device, if any, found during the test or exam, the student will be debarred for 3 years from appearing for the exam and this will be printed in the Grade statement/Transcript.
  ii) Tampering of MIS records, if any, found, then the results of the student will be with held and the student will not be allowed to appear for the Placement interviews conducted by the Office of Training & Placement, besides (i).

10. Additional Course Information

- The students can get their doubts clarified at any time with their faculty member with prior appointment.

For Senate's Consideration

Course Faculty

(Dr.Michael Arock)
Staff in Charge

(Dr.R.Eswari)
Staff in Charge

(Dr.V.Gayathri)
Class Committee Chairperson

(Dr.A.Vadivel)
HoD(CA)