

# PROGRAMMING IN THE C LANGUAGE

## COURSE DESCRIPTION

This course will teach the syntax and constructs of the **ANSI C** programming language. Programs in the course are designed to work in a(ny) Unix, Windows, OpenVMS, and other operating system platforms that support a **C** language compiler.

## COURSE OBJECTIVES

The overall course objective is to introduce basic and intermediate level concepts and techniques of the **ANSI C** programming language.

## COURSE TOPICS

### **C programming structure**

main routine layout

### **C data types**

statements used to allocate storage  
radix specifiers

### **Basic operators**

unary  
binary  
logical  
conditional

### **Beginning input and output in C**

printf function  
scanf function

### **Commands for C program development**

compile  
link  
run

### **Loop constructs**

for statement  
while statement  
do while statement

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## COURSE TOPICS

### **Arrays**

- layout
- dimensioning
- accessing

### **Decision statements**

- if blocks
- switch block

### **Defining and calling functions**

- prototyping
- data declarations
- returning values

### **Character string operations**

- null-terminated strings
- C run-time string functions

### **Structures**

- struct statement
- accessing structure members
- structures containing arrays
- structures containing structures

### **Defining macros**

- pre-processor directives
- including directives at compile time
- conditional compilation

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## COURSE TOPICS

### **C programming standards**

C89 and C99 standards considerations

## COURSE DURATION

This course requires **four** (4) or **five** (5) days, approximately 50% lecture, and 50% lab time.

**The course can be delivered on either / both a Windows or Unix / Linux (using a virtual machine Solaris 10/11, Red Hat Enterprise Linux, or SUSE Enterprise Linux) platforms.**

## COURSE PREREQUISITES

It is assumed that the participant has used an interactive computer system, specifically, use of a text-file editor. Basics of the specific editor(s) used for the course will be covered during the program development module.