

Intermediate ANSI C Language

Duration	4 days.
Participants	C programmers who need a deeper understanding of C programming.
Objectives	Upon successful completion of this course you will be able to: <ul style="list-style-type: none">• Use C Language compiled statements, preprocessor directives, and a broad range of standard library functions to handle strings, lists, and file I/ O.• Write intermediate-level C programs.
Overview	<p>This course begins with a comprehensive review of C Language, while at the same time delving into the topics, especially structures and pointers, in greater depth than done in an introductory C course. Then more advanced topics are presented, including qsort, bsearch, unions, enum, and bit manipulation. Models are presented for processing advanced data structures, such as linked lists.</p> <p>This course is especially designed for participants who either attended an introductory C programming course, or who programmed in C, but not recently, and who therefore need an intense but rapid review of basic topics.</p>
Prerequisites	Some knowledge of C programming.
Format	Lecture and discussion (50%) with programming exercises (50%).
Topic Outline	In-Depth Review of the Basics of C Language <ul style="list-style-type: none">ArraysPointersStringsStructures Row Pointers Debugging with <assert.h> str, strn, and mem functions File I/O <ul style="list-style-type: none">fread, fwritefseek, ftell, rewindfgetpos, fsetposflags for stream operationsclearerr, feof, ferror, perror

Intermediate ANSI C Language (continued)

Topic Outline

Memory Allocation and Reallocation

qsort

bsearch

Linked lists

Entry order lists

Queues

Double linked lists

Pointers to Functions, Dispatch Tables

unions

enum

Bitwise operators and Bitfields