Contact Info

Instructor: Brooke Chenoweth  
Email: bchenoweth@cs.unm.edu  
Office: Room 234 of Electrical and Computer Engineering (ECE)  
Web site: cs.unm.edu/~bchenoweth/cs241
Kernighan, Brian W. & Ritchie, Dennis M.
The C Programming Language, 2nd ed.,
ISBN: 0-13-110362-8
Course Description

CS-241 is an introduction to the C Programming language, an introduction to using a command-line interface of the Linux operating system, and an introduction to machine level data organization and memory allocation. Students taking this course should already be familiar with basic concepts of computer programming such as variables, conditional control flow and loops. Developing mastery of these fundamental concepts is one of the goals of CS-241.
Course Description

Students in CS-241 author many C programs:

- Lab assignments will be short and simple.
- Projects are more interesting and touch on a wide range of computer applications which have included
  - encryption
  - numerical analysis
  - databases
  - scientific visualization
  - artificial intelligence
  - genetic algorithms
  - games
Course Goals

1. Read and apply the C syntax covered in the textbook.
2. Without a computer, determine the output of C language source code involving triply nested loops, conditional control flow, function calls, pointers, arrays, arithmetic, logical and bit operators, structures and memory allocation.
3. Use a Linux command-line environment to manipulate files, and directories, and to edit, compile, run and debug C programs.
4. Implement, in C, any given algorithm with a complexity level equivalent to that of quicksort or a doubly linked list with accuracy, efficiency and clarity.
Schedule — Lectures (required)

- 12:30 pm - 1:45 pm
- TR
- Mechanical Engineering 218
## Schedule — Labs (also required)

<table>
<thead>
<tr>
<th>Lab</th>
<th>Time</th>
<th>Day</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9:00 am - 9:50 am</td>
<td>F</td>
<td>Centennial Eng Center B146A</td>
</tr>
<tr>
<td>2</td>
<td>2:00 pm - 2:50 pm</td>
<td>R</td>
<td>Centennial Eng Center B146A</td>
</tr>
</tbody>
</table>

You may attend a different section, but please obtain permission from the TA.
Office Hours

- Office Hours: MF 2:00 pm - 4:00 pm
- You may attend regular office hours without an advance appointment. If you want to meet at another time, make an appointment by email or in person.
- TAs have office hours, too! (Check course website)
- Feel free to ask any of the TAs for help.
Grading

- 60% Programming Assignments
- 30% Exams (midterm and final)
- 10% Lecture, quizzes, and participation
Assignments and Projects

- Assignments must be in UNM Learn to receive credit.
- It is your responsibility to make sure you submit the correct file.
- Don’t wait until the last minute to submit.
Extension Days

• Ideally, you’ll never need to turn in an assignment late.
• However, life happens!
• You have 10 extension days to spend through the term.
• Max 3 days per lab.
• Use them wisely.
• You don’t need to ask before using regular extension days.
• Contact me if these will not be enough, preferably before you are late.
ARC Accomodations

- The Accessibility Resource Center provides accomodations with students with disabilities.
- For example: Extra time and/or quiet location for exams
- http://arc.unm.edu
- Please take advantage of their services if applicable
UNM Learn

- [http://learn.unm.edu](http://learn.unm.edu)
- Assignment submissions
- Discussion forum
- Surveys and quizzes
  - Welcome quiz/survey is there now!
Working Together

• Working together and helping one another on all projects is highly encouraged. This includes discussion of:
  • project specification
  • algorithms
  • data structures
  • test cases
  • Not code!

• Do not share code.

• It is considered cheating to leave your code (paper or electronic copies) where others can find it. You responsible for the security of your intellectual property.
Cheating

- Don’t cheat.
- Using books, websites, other people as resources is expected, but document it.
- If unsure, talk to us first.
- Understand your code!
Computer Access

• Need to work on a CS Linux machine.
• Get a CS account (in addition to your UNM account)
  • Go see CS support staff in ECE 213
• Use Putty (or some other SSH) to connect:
  • moons.cs.unm.edu
  • trucks.cs.unm.edu
• With a CS computer account you can access *.cs.unm.edu and use the CS Linux lab in ECE 332
Summary

- Go to class and labs
- Keep up with the websites
- Expect some sort of work each week
- Be proactive!
- Form study groups
- Ask questions
- The TAs are there to help you
To do

• Visit course website
  • Slides will be posted after the lecture.
• Visit UNM Learn site
  • Take Welcome Quiz by Friday
  • Visit discussion forum
• Contact ARC if you need it
• Get a CS account before lab.
Programming vs Natural Language

- The entire C vocabulary consists under 40 reserved words.
- There are many libraries, such as `math` and `stdio`. However, these are the *proper nouns* of the language.
- A person can be fluent in a language without knowing the vast majority of its proper nouns.
- Proper nouns are learned as needed, and can be forgotten when no longer needed.
- Like natural languages, programming languages have punctuation and syntax rules (e.g. In C, every statement is ended with a semicolon). Programming languages, however, have fewer rules than natural languages.
Small Language with Complex Usage

- Programming Languages are much smaller and easier to learn than natural languages.
- However, programming languages are primarily used to express complex branchings of conditional logic that far surpass common uses of natural languages.
- Logic skills have strong carryover from one programming language to another.
Why use C?

- C and C++ are used widely in industry.
- Compact language, and does not change (unlike Java and C++)
- C influenced many later languages.
- Used in many higher level courses like:
  - Networking,
  - Operating Systems,
  - Compilers,
  - Machine Language
- C is “close to the machine”, yet portable.
Hello, World!

```c
#include <stdio.h>

int main()
{
    printf("Hello, World!\n");
    return 0;
}
```