# CS 332/532 Systems Programming

Lecture 1

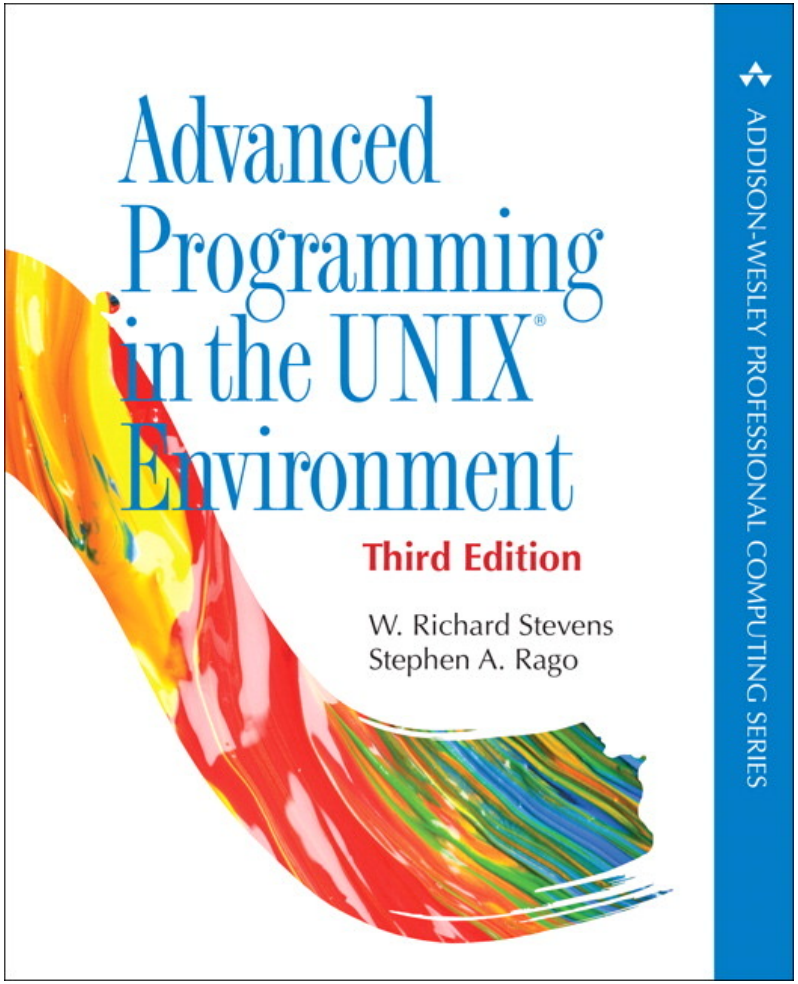
- Overview -

Professor : Mahmut Unan – UAB CS

# Agenda

- Syllabus
- Course Overview

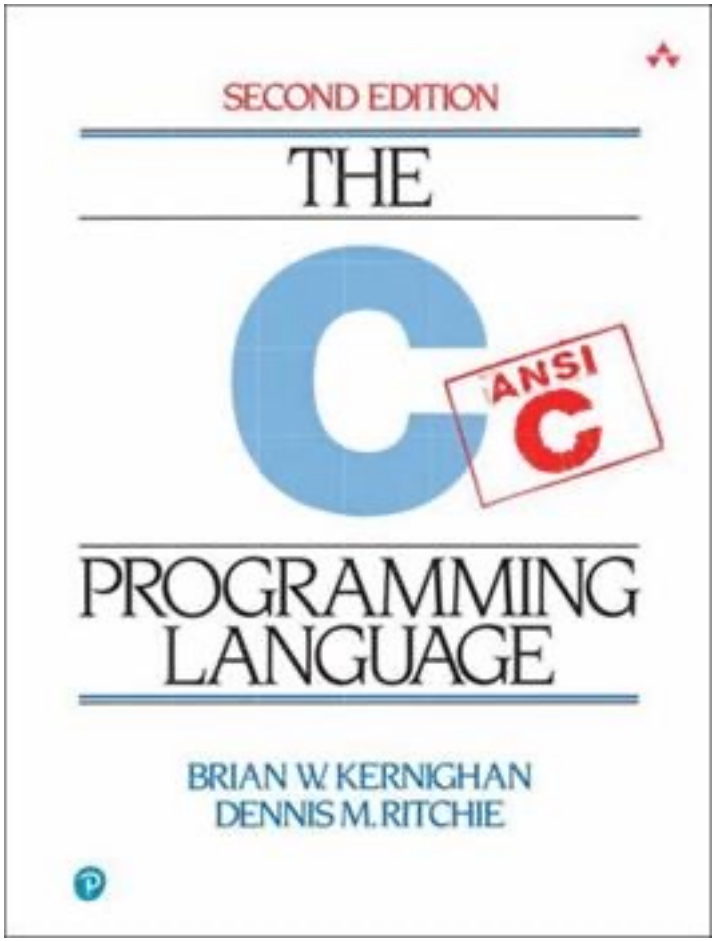
# Textbook



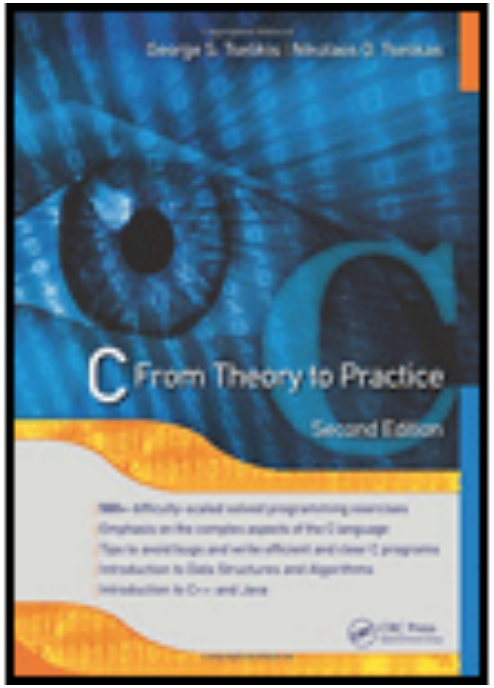

- Advanced Programming in the UNIX Environment (Links to an external site.), W. Richard Stevens and Stephen A. Rago, 3rd Edition, 2013. ISBN-13: 9780321637734 (paper) or 9780321638007 (ePub).

- URL: https://www.pearson.com/us/higher-education/program/Stevens-AdvancedProgramming-in-the-UNIX-Environment-3rd-Edition/PGM238501.html

# Recommended Textbooks




- C Programming Language, 2nd Edition Brian W. Kernighan , Dennis M. Ritchie
- C From Theory to Practice - 2nd edition, Nikolaos D. Tselikas and George S. Tselikis



# Objectives/Course Outcomes

- To introduce the basics of C programming language
- To introduce concepts of Unix architecture and internals
- To discuss shell scripting and systems programming
- To enable students to write, debug, and execute software projects in C

# Assignment Submission

# Honor Code for CS332

- You can work with your friend, but you can not copy from your friend
- You can search online/textbooks..etc, but you can not use it as is
  - Cite any resource you get benefit
  - Show your own contribution
- If you hesitate to use something, ask to TA or Instructor

# Suggested Resources

- Textbook website: https://www.pearson.com/us/higher-education/program/Stevens- Advanced-Programming-in-the-UNIX-Environment-3rd-Edition/PGM238501.html
- Author's website: http://www.apuebook.com/apue3e.html
- The Linux Command Line By William Shotts (a free online book):
- http://linuxcommand.org/tlcl.php

# Tentative Lecture Schedule

Topics

Introduction to Programming in C

Chapter 1. UNIX System Overview Systems Programming in C

Chapter 2. UNIX Standardization and Implementations

Chapter 3. File I/O
Chapter 4. Files and Directories

Chapter 5. Standard I/O Library
Chapter 6. System Data Files and Information

Chapter 7. Process Environment

Chapter 8. Process Control

Chapter 9. Process Relationships

Chapter 10. Signals

Chapter 11. Threads

Chapter 12. Thread Control

Chapter 13. Daemon Processes Chapter 14. Advanced I/O

Chapter 15. Interprocess Communication

Advanced Topics

# Why you should Learn C?

- Powerful
- C is the most commonly used programming language for writing operating systems.
- Coding close to wire
- Know register, stack, heap…
- Simple, elegant, wicked **fast**…
- C Family of Languages…
- Embedded programming
- ……
- Learn more:

https://www.pluralsight.com/blog/software-development/why-every-programmer-should-learn-c

https://en.wikibooks.org/wiki/C_Programming/Why_learn_C%3F

https://www.topcoder.com/blog/5-reasons-keep-learning-c/

# Next Class

- Introduction to C