

# CEng 536 ADVANCED UNIX

## Fall 2011

## Syllabus

### Instructor

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### Lectures:

Wednesday 9:40-12:30,

### Home page:

<http://www.ceng.metu.edu.tr/courses/ceng536>

### Newsgroup:

<news://news.ceng.metu.edu.tr:2050/metu.ceng.courses.ceng536>

### Catalog Description

UNIX internals, device driver development. Network interfacing, client/server and Daemon applications. Process structure, file system, memory management, terminal I/O, network interface, character and block device drivers, graphic interfaces.

### References

- W. Richard Stevens, *Advanced Programming in the Unix Environment*, Addison-Wesley, 1992
- Uresh Vahalia, *UNIX Internals: The New Frontiers*, Prentice Hall, 1995
- B. Goodheart, J. Cook, *Magic Garden Explained*, Prentice Hall, 1994.
- Various online Linux and BSD source code readers

### Outline

1. Unix overview (1 week)
2. Unix system programming (1 week)
  - (a) Shell and system environment, files, directories
  - (b) Process control and signals
  - (c) InterProcess Communication
  - (d) Multi-threading
3. Unix internals (11 weeks)
  - (a) Memory management
  - (b) Process management
  - (c) I/O system
  - (d) Device drivers
  - (e) Socket interface
  - (f) Streams interface

### Assignments:

3 programming homeworks, 1 or 2 kernel projects

### Grading:

|            |                              |
|------------|------------------------------|
| Homeworks  | 15%                          |
| Projects   | 30%                          |
| Midterm    | 25% (in class, open book)    |
| Final      | 25% (open book or take home) |
| Attendance | 5%                           |