

# CSCE604227 System Programming

## CSCE604227 Pemrograman Sistem

### Week 07: Project FUSE 4

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<https://doc0S.vlsm.org/SPSlides/sp07.pdf>

Always check for the latest revision!

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# SP241<sup>1</sup>): System Programming

Week	Topic
Week 00	Overview
Week 01	Linux Kernel and Programming Interface
Week 02	Revisit Linux From Scratch
Week 03	FUSE: Filesystem in Userspace
Week 04	GetOpt
Week 05	Autoconf and Automake
Week 06	Boxing/Unboxing
Week 07	Sync, SETUID, and MMAP
Week 08	Kernel Modules I
Week 09	Kernel Modules II
Week 10	Kernel Modules III

<sup>1</sup>) This information will be on **EVERY** page two (2) of this course material.

- Text Book** — The Linux Programming Interface, 2010, No Starch Press, ISBN 978-1-59327-220-3 — <https://man7.org/tlpi/>.
- Resources**
  - SCELE** — <https://scele.cs.ui.ac.id/course/view.php?id=3742>.  
The enrollment key is **XXX**.
  - Download Slides and Demos from GitHub.com**  
<https://github.com/os2xx/docOS/>:  
[sp00.pdf \(W00\)](#), [sp01.pdf \(W01\)](#), [sp02.pdf \(W02\)](#), [sp03.pdf \(W03\)](#),  
[sp04.pdf \(W04\)](#), [sp05.pdf \(W05\)](#), [sp06.pdf \(W06\)](#), [sp07.pdf \(W07\)](#),  
[sp08.pdf \(W08\)](#), [sp09.pdf \(W09\)](#), [sp10.pdf \(W10\)](#).
  - LFS** — <http://www.linuxfromscratch.org/lfs/view/stable/>
  - OSP4DISS** — <https://osp4diss.vlsm.org/>
  - This is How Me DO IT!** — <https://doit.vlsm.org/>
    - PS: "Me" rhymes better than "I" duh!

# Agenda

- 1 Start
- 2 Schedule
- 3 Agenda
- 4 References
- 5 Files
- 6 PROC File System
- 7 Linux Kernel Module

- The Linux Kernel Module Programming Guide — <https://sysprog21.github.io/lkmpg/>
- Devices — <https://git.kernel.org/pub/scm/linux/kernel/git/stable/linux.git/tree/Documentation/admin-guide/devices.txt>
- Examples — <https://github.com/sysprog21/lkmpg/tree/master/examples/>

- Makefile
  - ROOT/USER
  - make H01ins
  - make H01del
  - make H02ins
  - make H02del
  - ...
- helloXX.c
  - hello01.c
  - hello02a.c
  - hello02b.c
  - ...
- /var/log/kern.log

- `/proc/cpuinfo`
- `/proc/kallsyms`
- `/proc/meminfo`
- `/proc/modules`
- `/proc/version`

- `init_module()/cleanup_module()`
- `module_init()/module_exit()`
- `pr_info()`
- `module_param()`
- `module_param_array()`
- `copy_to_user()/copy_from_user()`