Administrative details

Textbook: Operating System Concepts — *Silberschatz, Galvin, Gagne*

Other references:

2. [Vahalia] Unix Internals The New Frontiers — *Uresh Vahalia* (Pearson Education Asia/LPE)
3. [ULK] Understanding the Linux Kernel — *Bovet, Cesati* (O’Reilly)

Weightage: Assignments 20%  Mid-sem 30%  End-sem 50%

Slides available under ~mandar/public_html
Why do we need an OS?

- **Convenience**
  - mediates access to hardware via by providing convenient abstractions (not easy to use hardware directly)
  - provides environment + services needed to run user programs in a convenient way

- **Resource sharing** between multiple users / processes

- **Protection/security**: prevent different users / processes from interfering with each other

- **Communication**: coordinate operation of different processes
What is an OS?

Definition

Software that manage a computer’s hardware resources for its users and their applications
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set of programs + a library of functions
- Kernel: core program that provides functions for basic operations (e.g. process creation / destruction) + interface to hardware via API (Application Programming Interface)

- Processes
  - system processes – daemons/servers (httpd, lpd, sendmail, etc.)
  - user processes – shell, editor, compiler, utilities
Things to manage

- CPU (processes)
- RAM (memory management)
- Hard discs (file systems)
- Keyboard, monitor (I/O devices)