CMPE283 Extra Study Material

Suggested reading:

- Virtual Machines (https://www.amazon.com/Virtual-Machines-Versatile-Platforms-Architecture-ebook/dp/B006NV2EO0)
- x86 ISA (Instruction Set Architecture) by Mindshare (https://www.mindshare.com/Books/Titles/x86_Instruction_Set_Architecture)
- Design and Implementation of the FreeBSD Operating System (https://www.amazon.com/Design-Implementation-FreeBSD-Operating-System/dp/0321968972)
- Definitive Guide to the Xen Hypervisor (https://www.amazon.com/Definitive-Guide-Xen-Hypervisor/dp/013234971X)

Presentation 1: History of Virtualization and Layering, P&G Theorem

- http://www.everythingvm.com/content/history-virtualization
- https://en.wikipedia.org/wiki/Timeline_of_virtualization_development
- Virtual Machines book chapter 1
- P&G Theorem Paper (ACM PDF file)

Presentation 2: x86 Architecture

- Mindshare book Part 1 (chapters 1-5)
- Mindshare book chapter 26
- Mindshare book chapter 23

Presentation 3: Operating Systems

- FreeBSD book chapter 3
- FreeBSD book chapter 4
- Mindshare book chapter 19
- FreeBSD book chapter 15

Presentation 4: CPUs

- Mindshare book chapter 16
- http://wiki.osdev.org/Paging
- Virtual Machines book chapter 2

Presentation 5: PV

- Xen book chapter 2
- Xen book chapter 6
- https://wiki.xen.org/wiki/Paravirtualization_(PV)

Presentation 6: HW Virtualization

- Mindshare book chapter 31
- http://www.cs.dartmouth.edu/~sergey/cs108/2014/TorreyGuestLecture-Hypervors.pdf
- Virtual Machines book chapter 8
- http://www.cs.cmu.edu/~412/lectures/L04_VTx.pptx

Presentation 7: Memory Virtualization

- Virtual Machines book chapter 8
- http://www.cs.rochester.edu/~sandhya/csc256/seminars/hedayati_vm_npt.pdf
- https://people.freebsd.org/~neel/bhyve/bhyve_nested_paging.pdf
- http://www.cs.cmu.edu/~412/lectures/L04_VTx.pptx

Presentation 8: Devices

- https://cs.nyu.edu/courses/fall14/CSCI-GA.3033-010/Microsoft-Virtual-Devices.pdf (Hyper-V specific devices only)
- https://labs.vmware.com/download/47 (A bit dated)
- https://www.ibm.com/developerworks/library/l-pci-passthrough/index.html

Presentation 9: Implementations

- None

Presentation 10: ARM Virtualization

- https://developer.arm.com/products/architecture/a-profile/docs/100942/latest/aarch64-virtualization
- https://developer.arm.com/products/architecture/a-profile/docs/100942/latest/hypervisor-software

Presentation 11: Management and Deployment

- None