

Computer systems architectures

CM12002

Russell Bradford

2024–2025



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Probably there are pixies inside doing stuff

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“Operating systems are like underwear - Nobody really wants to look at them”

Bill Joy

Structure of teaching

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- Tuesday 15:15 EB1.1
- Thursday 14:15 CB1.10 before Consolidation week
- Thursday 12:15 CB1.11 after Consolidation week, before Easter
- Thursday 14:15 CB1.10 after Easter (Fabio)

Content

From the Unit catalogue:

- introduction to operating systems: what they are and what they do, history, ownership and protection of resources
- processes: scheduling, deadlock, and inter-process communication (IPC)
- memory: virtual memory and memory management
- files and file systems

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That may not sound like much, but these are all *very* complicated topics that have not yet been solved to everybody's satisfaction

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Operating systems as a subject has been going over 60 years, but still is a matter of research and development

Part of that is because computers have changed massively, of course, but part is because the problems to solve are so difficult

Resources

Some books I found on my shelf:

- “Operating Systems Internal and Design Principles” W Stallings, Prentice Hall
- “Computer Systems Architecture A Networking Approach” R Williams, Addison-Wesley
- “Introduction to Operating Systems Behind the Desktop” J English, Palgrave
- “Operating Systems a Concept-Based Approach” D M Dhamdhere, McGraw Hill
- “Operating Systems Concepts with Java” A Silbershatz et al, Wiley

Resources

N.B. These were given to me by the publishers so I'm not saying they are the best books out there

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The thing to do is look at several and find one that suits you: they all contain roughly the same material

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(link on Moodle)

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These slides will appear on my Web page after each lecture

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I don't monitor all the dozens of other ways of messaging (Moodle, Teams, etc.) and email is the only way to be sure of getting a message to me

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I keep a 9-5 (approx) Monday–Friday week and am unlikely to respond out of those times (a long time ago someone said “Get a life”, so I did)

Standard Introductory Slides

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They are often abbreviated in style, and so are not the whole story and would not be suitable to be quoted verbatim in an exam

Standard Introductory Slides

Don't try to copy everything down from the slides in lectures—the slides will be available after each lecture

Instead, make a note of what is important and use that later—in conjunction with the slides—to guide your further reading and study

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You need to take your own notes, read, and *participate*

You don't expect to get fit simply by paying to joining a gym. . .

Standard Introductory Slides

Computer Science is not a spectator sport

Anon