How do we currently teach mathematics in class?

• PowerPoint slides
\[ \int_0^\infty \frac{\pi}{\sqrt{x^3}} \, dx \]
How would you type this in a lecture?

Type:
\int_0^\infty \frac{\pi}{\sqrt{x^3}} \, dx

LaTeX:
\int_0^\infty \frac{\pi}{\sqrt{x^3}} \, dx
How do we currently teach mathematics in class?

- PowerPoint slides
- Whiteboard to add, explain, modify, interact
  - Back to students
  - No record kept
  - Not available to external students
  - Can’t refer back later
  - Can’t add to later
How do we currently teach mathematics in class?

- PowerPoint slides
- Whiteboard to add, explain, modify, interact
  - Back to students
  - No record kept
  - Not available to external students
  - Can’t refer back later
  - Can’t add to later

- Tablet PC
  - Write on PowerPoint slides, facing students
How do we deliver up-to-date lecture material to external students?

Apart from study book…

- PowerPoint slides, prepared for on campus students, with gaps/no answers
  - *Example* (PPT)
- First attempts to record live lecture audio
- No Breeze
  - *Example* (Breeze)
- Same problem with iplod (and poor audio quality)
What is needed in maths

• Handwriting facility
  – during lectures
  – in communication (eg emails, chats)
  – after lectures (additional material, updates)

• Recording of handwriting
  – Screen capture in lectures, afterwards
  – Example (Camtasia screen capture)
What we need is software that
  – can capture the screen including audio
    • live and in your office
  – allows editing after recording to
    • cut unwanted bits from live lecture
    • add extras such as presenter video, movies, quizzes, titles
  – is easy to use if you don’t want to edit
    • templates
What we need is (2)

also software that

– allows exporting in various formats
  • Flash, Windows Media Video, DivX/XviD, Quicktime MOV, iPod M4V (MP4)
  • Audio only MP3
– allows choice of quality of audio and video (file size)
– contains good compression algorithm
– allows live streaming (CQU have done it!)
Comparison

• Breeze
  – No video. Flash only. No compression parameters

• Iplod
  – No video. No compression parameters. No editing

• Lectopia
  – No compression parameters. No editing. Can choose between some formats.

• Elluminate
  – Conference tool. No editing. No compression parameters. In a lecture situation?
More about Camtasia

- Record webcasts
- Create movies from animated GIFs.
- Create animated GIFs
- SCORM compliant
- Extract audio-only
- Add flash quizzes
More about Camtasia (2)

- Transitions, PiP (*Example* camera)
- Flash hot spots
- Callouts (text, arrows, shapes)
- PowerPoint Add-in
- Create Flash menu
- Zoom-n-pan (?)
- Create CD and web menu (?)