

# BIL103E Basic Concepts Topic Headings

## Note:

If you don't understand what something in these notes means, it is your job to find out.

- Introduction to computers:
  - What is a computer?
  - What is representation?
  - What is an encoding?
  - What is a program?
  - Software vs. hardware.
- Modern PC architecture.
  - Processor, system bus, secondary storage, I/O, extension buses, memory.
- Operating systems:
  - What is an operating system?
  - Why operating systems?
    - (What are the things that operating systems are for?)
  - Examples of operating systems.
- Files.
  - Purpose of file systems.
  - File hierarchy.
    - Paths.
      - Relative vs. absolute.
    - Typical Unix hierarchy.
  - File manager.
    - PCManFM.
      - Tree view.
    - Creating, deleting, copying, moving.
  - File types.
    - Extensions.
    - MIME type.
    - Text vs. binary.
      - Geany text file editor.
  - Archiving/compressing & extraction.
    - ZIP via PCManFM.
- Binary Numbers.
  - Bits.
  - Bytes.
  - Data units & file sizes.
  - Hexadecimal numbers.

- Why bytes? Why hexadecimal numbers?
- Binary  $\longleftrightarrow$  hexadecimal conversion.
- Character encodings.
  - What is a character encoding?
  - Why are character encodings needed?
  - ASCII, ISO8859-X, Unicode/UTF-16, Unicode/UTF-8.
  - Universal encoding vs. multiple encodings.
  - Character map utility.
  - wxMedit viewing hex.
  - wxMedit & Geany changing and viewing encodings.
- Metadata.
  - Metadata via PCManFM.
  - Metadata via Firefox.
  - Metadata via Geany.