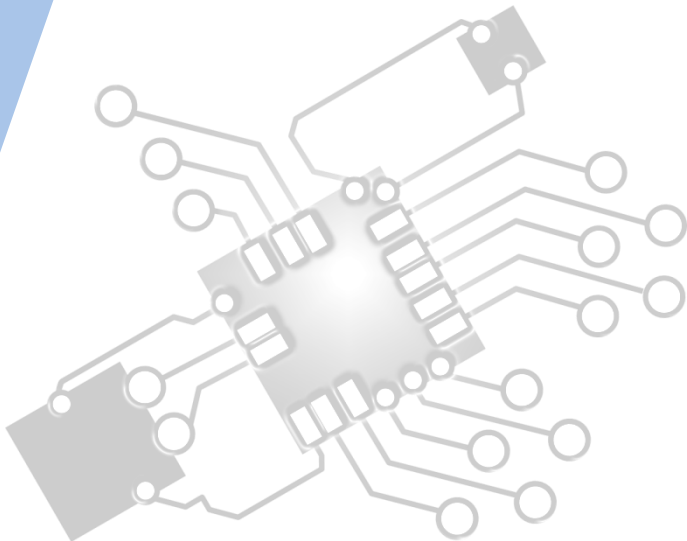




# *System Design* *basics*

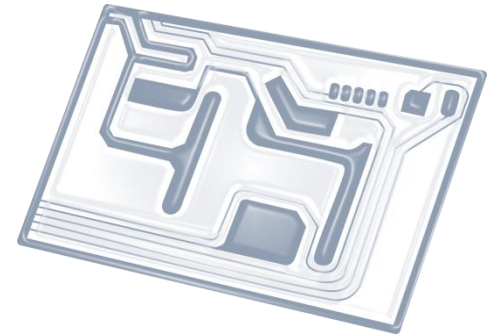
IB Computer Science



*Content developed by*  
**Dartford Grammar School**  
*Computer Science Department*



# HL Topics 1-7, D1-4



1: System design



2: Computer Organisation



3: Networks



4: Computational thinking



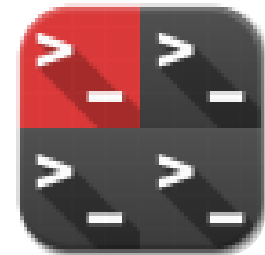
5: Abstract data structures



6: Resource management



7: Control



D: OOP

# HL & SL 1.2 Overview

## Components of a computer system

- 1.2.1 Define the terms: hardware, software, peripheral, network, human resources
- 1.2.2 Describe the roles that a computer can take in a networked world
- 1.2.3 Discuss the social and ethical issues associated with a networked world

## System design and analysis

- 1.2.4 Identify the relevant stakeholders when planning a new system
- 1.2.5 Describe methods of obtaining requirements from stakeholders
- 1.2.6 Describe appropriate techniques for gathering the information needed to arrive at a workable solution
- 1.2.7 Construct suitable representations to illustrate system requirements
- 1.2.8 Describe the purpose of prototypes to demonstrate the proposed system to the client
- 1.2.9 Discuss the importance of iteration during the design process
- 1.2.10 Explain the possible consequences of failing to involve the end-user in the design process
- 1.2.11 Discuss the social and ethical issues associated with the introduction of new IT systems

## Human interaction with the system

- 1.2.12 Define the term usability
- 1.2.13 Identify a range of usability problems with commonly used digital devices
- 1.2.14 Identify methods that can be used to improve the accessibility of systems
- 1.2.15 Identify a range of usability problems that can occur in a system
- 1.2.16 Discuss the moral, ethical, social, economic and environmental implications of the interaction between humans and machines



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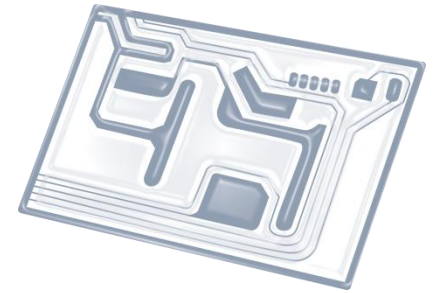


7: Control

D: OOP



# Topic 1.2.13



Identify a **range of usability problems** with commonly used **digital devices**

# Be aware of usability problems of

- PCs (including laptops/desktops/tablets/mobile devices)
- Digital cameras
- Cell phones (mobiles)
- Games consoles
- MP3 players
- Other commonly used digital devices (e.g. printers...)

# Considerations/Examples:

- Microsoft drastically changed user interface of Windows 8 compared to Windows 7. This confused many users.
- Settings menus in early versions of Android were confusing and expressions were sometimes meaningless
- Android operating system exists with many different user interfaces designed by manufacturers
- Who knows instantly how to close an app in Windows 8?
- Confusing design of switches on household devices
- Buttons on a compact camera designed too small making it hard to use them correctly