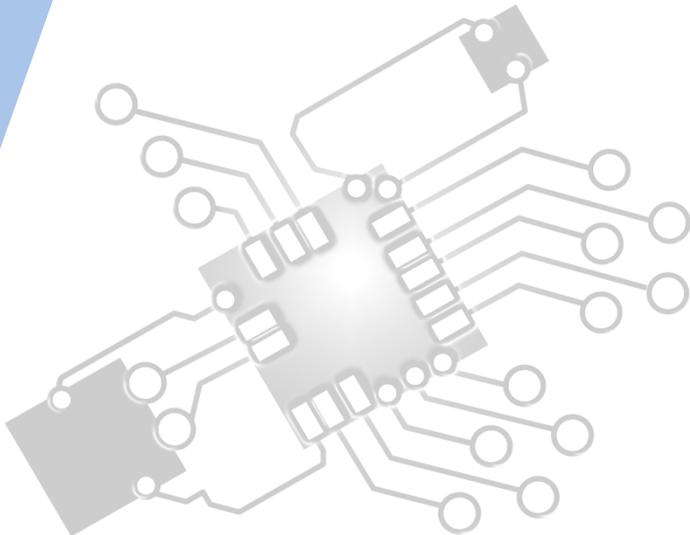




# Wireless networking

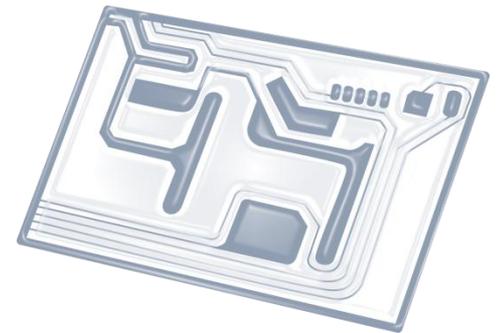
IB Computer Science



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



# HL Topics 1-7, D1-4



1: System design



2: Computer Organisation



3: Networks



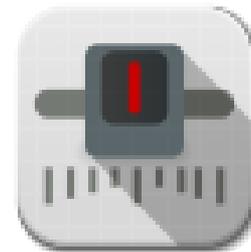
4: Computational thinking



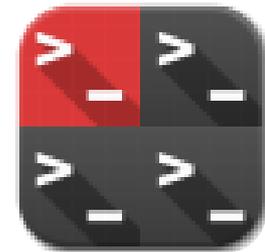
5: Abstract data structures



6: Resource management



7: Control



D: OOP

# HL & SL 3 Overview

## Network fundamentals

- 3.1.1 Identify different types of networks
- 3.1.2 Outline the importance of standards in the construction of networks
- 3.1.3 Describe how communication over networks is broken down into different layers
- 3.1.4 Identify the technologies required to provide a VPN
- 3.1.5 Evaluate the use of a VPN

## Data transmission

- 3.1.6 Define the terms: protocol, data packet
- 3.1.7 Explain why protocols are necessary
- 3.1.8 Explain why the speed of data transmission across a network can vary
- 3.1.9 Explain why compression of data is often necessary when transmitting across a network
- 3.1.10 Outline the characteristics of different transmission media
- 3.1.11 Explain how data is transmitted by packet switching

## Wireless networking

- 3.1.12 Outline the advantages and disadvantages of wireless networks
- 3.1.13 Describe the hardware and software components of a wireless network
- 3.1.14 Describe the characteristics of wireless networks
- 3.1.15 Describe the different methods of network security
- 3.1.16 Evaluate the advantages and disadvantages of each method of network security



1: System design

2: Computer Organisation



3: Networks

4: Computational thinking



5: Abstract data structures

6: Resource management

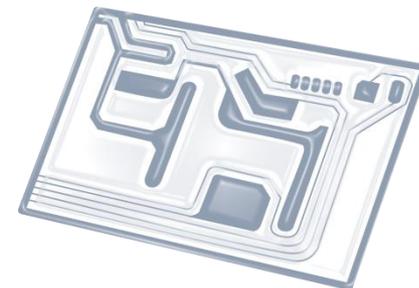


7: Control

D: OOP



# Topic 3.1.13



Describe the **hardware** and **software components** of a wireless network

*The Wireless Revolution Continues...*



# Hardware components

- **Node:** PC, Laptop, Tablet, Printer
- **Wireless network interface card**
- **Radio waves** (Bluetooth/WiFi)
- Connection point: **Wireless AP / Router**



# Software components

- **Network Operating System (with drivers)**
- **Protocol stack (TCP/IP)**
- **Applications (Browser/File explorer)**

