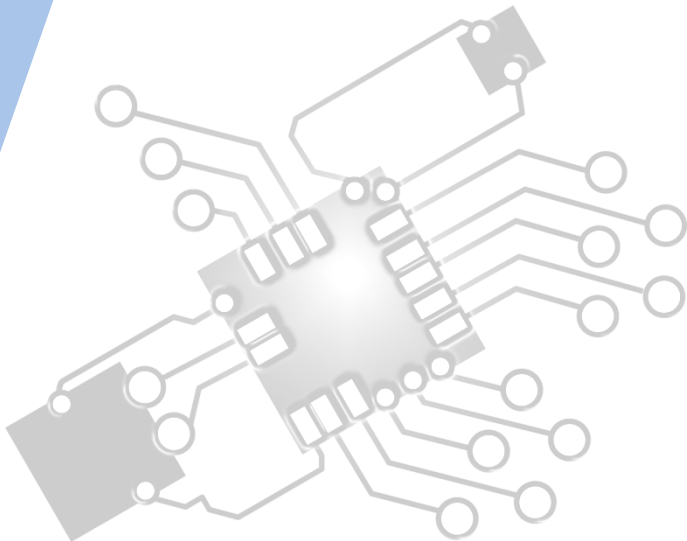




Wireless networking

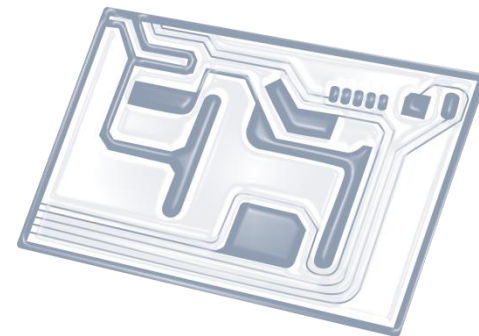
IB Computer Science



*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

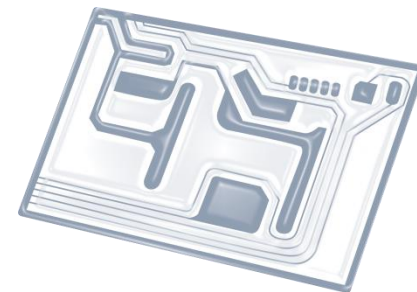


7: Control

D: OOP



Topic 3.1.12



Outline the **advantages** and **disadvantages** of wireless networks



Advantages



- **Uses unlicensed radio spectrum**
 - Doesn't cost anything
- **LANs can be set up without cabling**
 - Doesn't take space or time to lay the cables. No extra cost on cables
- **WiFi can support roaming between access points**
 - People can switch from router to router automatically depending in which connection is best
- **Global standards (eg. 802.11n)**
- **Setup costs are minimal**
 - Many types are available on the market and they are affordable

Disadvantages



- **Interference**
 - as the 2.4GHz spectrum is often crowded with other devices
- **Limited Range**
- **WEP**
 - this encryption is not difficult to hack and WPA2 has solved this problem
- **Access Points**
 - these can be used to steal data
- **Health Concerns**

In an exam be prepared to **EVALUATE**

- What's good about it?
- What's bad about it?
- When is it most appropriate?

