Introduction to: Operating Systems & Internetworking

M30233

Athanasios (Thanos) Paraskelidis

How to Contact me

- **Buckingham 1st floor, room 1.29**
- **Telephone: 023-9284-(6434)**
- **E-Mail:** athanasios.paraskelidis@port.ac.uk
- **All teaching, learning and assessment materials are on** Moodle
- Post your module related questions on Moodle

Overview the Internetworking theme

The aim of this part of the module is to:

- Examine technologies and operations of the communication networks, emphasising on routing and IP addressing, and associated security and quality of service issues

- **This theme of the module will cover the following Learning Outcomes:**

a. Identify and evaluate the principles, operations, limitations and security considerations of modern routing protocols.

b. Evaluate and apply the various approaches of IP addressing along with the related network services.

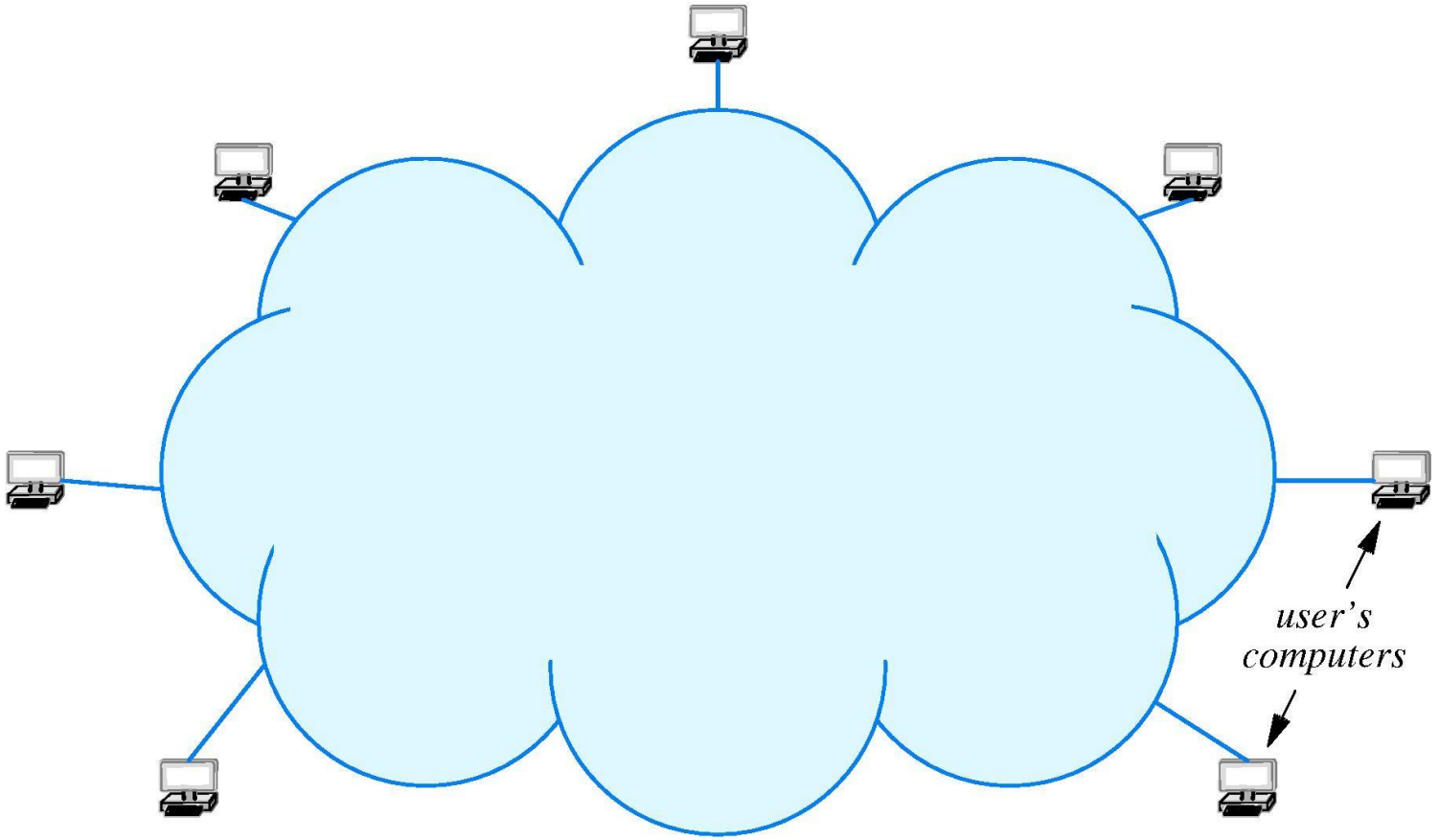
Recommended Reading

- Comer, D., *Computer Networks and Internets*, 6th edition, Pearson, 2015
- Andrew S. Tanenbaum and David Wetherhall, *Computer Networks*, 5th edition, Pearson Education, 2011
- Larry Peterson, *Computer Networks: a system approach*, 5th edition, Morgan Kaufmann, 2012
- Chwan-Hwa Wu, *Introduction to Computer Networks and Cybersecurity*, CRC Press, 2013

Internetworking Lecture Theme

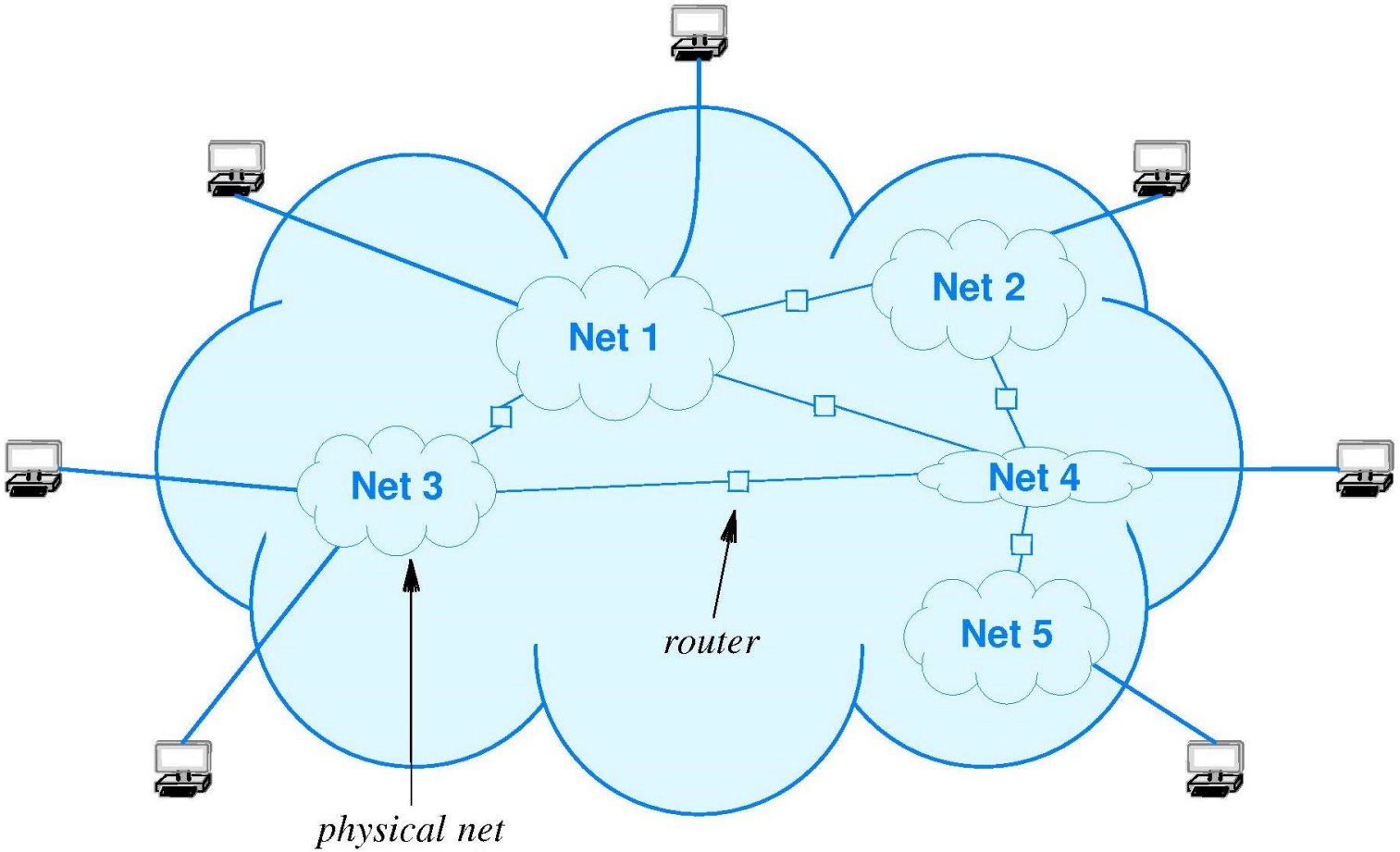
- Internetworking
  - Networking overview – hardware & software
  - Network Services
  - IPv4 & IPv6
  - IP addressing – Classful and Classless
  - Routing–Static
  - Routing–Dynamic
    - RIP – Routing Information Protocol
    - OSPF – Open Shortest Path First
    - BGP – Border Gateway Protocol
  - Network Routing Security

What are is Internetworking (a)



How do we enable communications between end-user computers?

What is Internetworking (b)



Assessment – reminder

- 70% written exam, covering all learning outcomes.
  - 90 minutes exam – equal split of marks between the themes
- 30% coursework, assessed through a series of Moodle quizzes.
  - Formative feedback on lab books throughout term.
  - Equal split of marks between the themes
  - **Students have failed the module due to non engagement with the coursework.**

Delivery method

- Weekly lectures
  - **Monday 9am**
  - **Richmond building – LT1**

- Weekly practical sessions
  - Face to face on campus sessions
  - A new task every week
  - Anglesea building, room A2.03
  - Dual boot lab – Windows & Linux (CentOS)
  - Cannot record the sessions
  - Practical sessions are running at capacity

Tools to be used..

- Windows/Linux networking utilities
  - Familiarisation with commands
  - Understand the produced results
    - Identify the limitations
  - Most weekly practical activities can be completed:
    - By using the university or your own devices
    - Clearly stated on the worksheets

Cisco Packet Tracer

- Cisco Packet Tracer (PT)
  - Used for the Routing Exercises → RIP + OSPF
  - Familiarisation with PT is needed
  - **ACTION:** Create account → https://skillsforall.com/
    - Use your university email
  - Resources will be provided
    - Through Moodle
    - Skills for All portal

- Previous experience with PT? Please let me know.

Good luck to everyone!