

# Introduction

## SCC.203 – Computer Networks

Geoff Coulson  
Week 11 Lecture 1a



## Lecturing team

Prof. Geoff Coulson (Emeritus Professor)

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- Long-standing role in School of Computing and Communications...
- Member of the *Distributed Systems* research group
- [g.coulson@lancaster.ac.uk](mailto:g.coulson@lancaster.ac.uk)



# Lecturing team

Dr. Muhammad Bilal

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- Lecturer, and member of the *Computer Networking* research group
- [m.bilal8@lancaster.ac.uk](mailto:m.bilal8@lancaster.ac.uk)
- B62, B - Floor, InfoLab21

No photo!

# Lecturing team

Dr Onur Ascigil

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- Lecturer, and member of the *Computer Networking* research group
- Convenor of SCC.203 (not actually lecturing)
- [o.ascigil@lancaster.ac.uk](mailto:o.ascigil@lancaster.ac.uk)



# Schedule

## Lectures

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Lecture	Time	Location
Lecture 1 (odd numbers)	Mondays 10:00-11:00	Margaret Fell Lecture Theatre
Lecture 2 (even numbers)	Thursdays 01:00-02:00	Margaret Fell Lecture Theatre

# Schedule

## Practical Labs – in InfoLab building

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Lab	Date & Time & Location (Infolab Building – INF)
1	Mondays, 13:00 – 15:00 (Session 2 in INF B81 and Session 7 in INF B79)
2	Tuesdays, 16:00 – 18:00 (Session 4 in INF B79)
3	Wednesdays, 13:00 – 15:00 (Session 5 in INF C77)
4	Thursdays, 09:00 – 11:00 (Session 3 in INF B81 and Session 6 in INF C77)
5	Thursdays, 11:00 – 13:00 (Session 8 in INF B81)
6	Fridays, 09:00 – 11:00 (Session 1 in INF C77 and Session 9 in INF B81)

- Starting this week (Week 11)

# Module Aims

From Module Handbook (paraphrased)

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- To provide students with a generic understanding of data transmission techniques in computer networks (esp. the Internet)
- To introduce students to key features of relevant protocols needed to establish and maintain data communication between network endpoints
  - enabling students to understand the key building blocks of the Internet
- To familiarise students with basic practical programming elements that are required to support network communication
  - from both an application level and network protocol perspective

# Topics

## First Half of Term

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<b>Week 11</b>	Lecture 1	What is the Internet?
	Lecture 2	Edge Networking & Core Networking
<b>Week 12</b>	Lecture 3	Delay, Loss & Throughput
	Lecture 4	Protocol Layers & Encapsulation
<b>Week 13</b>	Lecture 5	Network Applications more generally
	Lecture 6	The Web and the Hypertext Transfer Protocol
<b>Week 14</b>	Lecture 7	The Domain Name Service
	Lecture 8	Email
<b>Week 15</b>	Lecture 9	Transport & UDP
	Lecture 10	TCP



# Topics

## Second Half of Term

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<b>Week 16</b>	Lecture 11	Congestion Control
	Lecture 12	IPv4 Addressing & Forwarding
<b>Week 17</b>	Lecture 13	Network Address Translation & Dynamic Host Configuration Protocols
	Lecture 14	Switching & Routing
<b>Week 18</b>	Lecture 15	Open Shortest Path First & Border Gateway Protocols
	Lecture 16	Satellite Communication
<b>Week 19</b>	Lecture 17	Error Detection & Correction
	Lecture 18	Multiple Access & Local Area Networks
<b>Week 20</b>	Lecture 19	Internet of Things
	Lecture 20	Revision Lecture

Later lecture topics may be subject to change

# Assessment

## Exam – 60% of Overall Weighting

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- Exam takes place during the exam period in term 3
- 150 minutes in length
- Each question is worth 20 marks; answer 3 out of 4 questions
- Any topic in the lectures or practicals may be included in the exam, unless stated otherwise

# Assessment

## Coursework – 40% of Overall Weighting

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- Two separate coursework elements
- *Practical 1: Network Application Development*
  - *Building networked applications in Python*
  - Details of % weighting and submission dates available in practical sessions
- *Practical 2: Network Configuration and Testing*
  - Build and configure a network in an emulator
  - Details of % weighting and submission dates available in practical sessions

# In-person Attendance Check-in

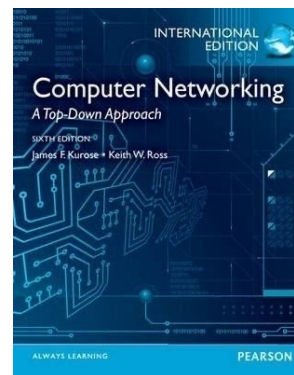
iLancaster

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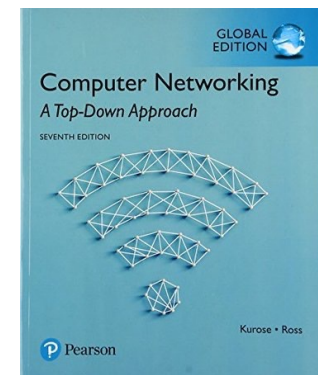
- Ensure you have the most up-to-date version of iLancaster
- Then, to check in automatically:
  - **Turn on Bluetooth** and **Location Services** on your device
  - If you want to know when you're checked in, **turn on Notifications** on your device

# Required Reading

- “Computer Networking: A Top-Down Approach”
  - Kurose & Ross
  - 6<sup>th</sup> Edition (7<sup>th</sup> is close enough for the purposes of this course)
  - Each lecture in our course is linked with a corresponding chapter
  - Digital version available through Library:
    - <https://bit.ly/2FunP0a> (7th Edition)
  - Physical copies too:
    - <https://bit.ly/2ALdtVu>



or



# A word on plagiarism

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- Plagiarism is passing off someone else's work as your own, including:
  - Submitting (e.g.) code that someone else wrote
  - Paying someone else to do it for you
  - Working on non-group work as a group, and then submitting it as individual work
  - Sharing code that you (or others) subsequently adapt/ obfuscate

# What do we expect from you?

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- **Integrity** (no plagiarism, no faking of results)
- **Effort** (active learning):
  - Come to lectures (it really helps!)
  - Come to labs (they are compulsory)
  - Get the textbook and use our resources (and the world's resources) effectively
  - Take notes (there's clear evidence that hand-written notes taken by students are more effective than handouts!)
  - Read around the subject and try things out for yourself
  - Ask us questions in lectures/labs
  - Take notes (again, because the slides are not enough when you try to revise, really...!)
  - Plan your time and coursework carefully

# What can you expect from us?

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- We'll do our best
  - To make all our lecture material available on Moodle
  - To give you appropriate references to follow up
  - To check personally that the labs are running smoothly and the TAs are offering good support
  - To arrange extra support if you've already tried the normal routes (books -> web -> TAs)
  - To respond to email (ideally as a last resort!)
    - we get more email than we can handle, and have a lot of teaching/research/admin commitments, so we're often not in our offices!



# Online working

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- Online tools will be used to facilitate some aspects of learning; e.g. Moodle, Teams, etc.
    - the use of these is governed by standard policies that you are all currently bound by and have agreed to
  - Plagiarism and academic malpractice standards still apply online
  - Direct sharing with other students of code, solutions (including partial solutions), either privately or in an open chat, is **not acceptable**
  - If you're not sure whether you should post or share something, please ask
  - If you see content or a post you don't like, message or email the course tutor to alert them to it
  - We want these tools to be used; they will greatly assist your learning experience!
    - However, we are asking that you use them sensibly and with respect

Any questions?

