COS4018-B: Internet Technologies

Dr Ibrahim Ghafir

Objectives

- Introduce the module
- Study requirements
- Module learning outcomes
- Module topics
- Module assessment
- Set context for learning and teaching

Module Teaching

- Module leader: Dr Ibrahim Ghafir
  - Assistant Professor in Computer Science
  - Research interests: Network security, intrusion detection systems, wireless communication, Internet of Things, artificial intelligence and machine learning
  - Projects: Cyber-2, Cyber Security Challenges for Internet of Things and Core Networks
  - Google Scholar profile
  - Email: I.Ghafir@bradford.ac.uk
  - Office: Horton D4.05

https://scholar.google.com/citations?user=kGsp2X0AAAAJ&hl=en

Module Teaching

- 20 Credit Module
- How will it be delivered?
  - 1 hr lecture + 1 hr tutorial + 2 hr lab per week
  - Directed Study: 152 hrs
- Lab sessions: You must fill in the lab rooms in this order: Horton D1.04, D1.05, D1.03, D1.02, D1.01
  - If there are available spaces in Horton D1.03, the lecturer/demonstrators will not visit Horton D1.02 and Horton 1.01
  - 3 hours, no break in between …
- All learning materials and supporting information are on Canvas
  - Lectures, Tutorials, Labs, Announcements, Reading list
- Learning materials do not cover everything in depth
  - Use references, reading list and other resources!

Module Topics

Topics that are going to be covered include, but not limited to:

- What is the Internet
- Networking fundamentals and Internet Protocols, e.g., IP, HTTP, TCP, UDP
- Internet Architecture
- Website types and layouts
- HTML, CSS etc.
- XML
- JavaScript
- PHP
- MySQL
- Security issues in internet-connected systems
- Internet Futures (Mobile, Cloud, SaaS, IoT)

Module Learning Outcomes

- Understand and discuss operating principles and basic functionalities of Internet technologies.
- Demonstrate how they communicate, can be programmed, and used for web applications.
- Represent, process and transfer information over the Internet.
- Analyse and discuss the principles of data transfer on World Wide Web.
- Use the Internet as a tool for information processing and communication.
- Analyse and apply the modes of communication using Internet technologies to present and communicate information on the Internet.

Module Assessment

- Assessment 1: A coursework to demonstrate practical example of Internet Technologies
  - Develop a dynamic web application and demonstrate its features
  - No IDEs like Adobe Dreamweaver that allows to use drag and drop feature to create a website.
  - Weighting: 60% of total marks
  - Submission: Week 10

- Assessment 2: Computerised examination
  - An on-campus computer-based quiz, 1 hour
  - Weighting: 40% of total marks
  - Timeline: Week 10

Module Assessment

- Submission deadline, assessment approval
- Assessment marks and feedback
- Assessment information and marking criteria
  - Available in Canvas, end of Week 4
- CW extension and extenuating circumstances
  - Module leaders cannot approve/reject these requests
  - e-vision
  - programme administrator, fedt-prog-admin@bradford.ac.uk
- Supplementary assessment
  - July/August
  - Same as the original assessments

Module Materials

- Available in CANVAS
- The lecture notes put on CANVAS may not cover the lecture topic in depth
- A list of books and tutorials will be suggested
- Recent research papers will be recommended over the lecture sessions

Suggested Reading

- **Computer networks** by Andrew Tanenbaum, Nick Feamster, David Wetherall
- **Internet of Things: Architectures, protocols and standards** by Simone Cirani, Gianluigi Ferrari, Marco Picone, and Luca Veltri
- **Computer networking: A Top-down approach** by James Kurose and Keith Ross
- **Internet of Things security : Principles, applications, attacks, and countermeasures** by Brij B. Gupta and Megha Quamara
- **HTML & CSS: design and build websites** by Jon Duckett
- **JavaScript & JQuery: interactive front-end Web development** by Jon Duckett
- **Learning responsive web design: a beginner's guide** by Clarissa Peterson
- **PHP & MySQL in Easy Steps** by Mike Mcgrath
- **PHP and MySQL for dynamic web sites** by Larry Ullman

How to Succeed

- Attendance to lectures and labs is linked to performance/grades
  - Please ask questions!
  - In the labs, ask for help
- Independent (directed) study is required
  - Attending lectures is not enough!
  - Learning materials on Canvas is not exhaustive (use references, reading list and other resources)
- Put into practice what you learn

What I Expect From You

- Good attendance, card readers
- Attendance monitoring: 75%, 60%, withdrawal and/or suspension
- Positive questions, comments and effective engagement
- Muted phones
- Be on time
- A decent quality of academic writing
- Standard etiquette for speech/presenting
- No music on phones, tutorial sessions
- Be cool to one another ☺
- Disruptions in lectures will not be tolerated at all

Rules of Bahaviour in Class

- You all chose to take this programme of study
  - You are adults … we expect you to behave as adults
- You are in an adult learning environment, so you should act accordingly.
  - Staying for the full class
  - Paying attention to the lecturer
  - Taking notes with pen and paper
  - Engaging in class activities
  - Leaving your phone on silent – in your bag
  - Not chatting whilst the lecturer or other students are speaking
  - Not walking around the room

Rules of Bahaviour in Class

- We ask that you do this so that
  - You can learn
  - Other students in the class can learn
- Serious misconduct
  - Swiping in a card for someone who is absent
  - Signing in on a sheet for someone who is absent
- Consequences for misbehaviour and misconduct
  - You will be given a warning
  - If you persist, you will be asked to leave the class, and your name and UB number will be recorded and sent to the engagement team for non-attendance
  - If you keep engaging in distributive behaviour, you will be removed from the programme.

Questions?