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SCC.141: Professionalism in Practice
Module leader in Term 1

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SCC.141:

- Is designed to provide students with a strong foundation in principles of responsible computing, covering the legal, social, ethical and professional challenges that a practicing computer scientist regularly faces.
- Is research-led and will focus on workshop activities that require you to conduct research into contemporary examples of where technology has resulted in both benefits and harm to people and society.
- Examines the prevalence and impact of the gender data gap, accessibility constraints and exploring the benefits of diversity in the workplace through real-world examples

How is this Course Taught?

Lectures, seminars and assessment

- Lectures Weeks 1-10:
  - Wednesdays: 10:00–11:00
  - Wednesdays: 15:00-16:00 **(repeat)**
  - In-person –*please check your timetable for the lecture venues*
- Seminars:
  - In-person, B069 FST building:
    - *please check your timetable for the venue*
    - *Please note the rooms will reach capacity so arrive 5 minutes before the session starts.*
- CW Assessment:
  - Group submission 1 in Week 10 = 10%
  - Group submission 2 in Week 20 = 20%
- Exam:
  - Electronic in-person in June = 70%

Group work and Independent Learning

- The Seminar sessions:
  - The seminar sessions are compulsory.
  - You will be formed and working in small groups on specific topics.
  - In your groups, you will be guided through tasks and activities that will provide the building blocks for a final group report that you will submit at the end of each of terms 1 and 2.
- Independent learning:
  - As a guide, you are expected to spend 6 hours per week on this module “outside of the lectures and seminars”.
  - It is not enough to rely on the lecture slides to complete the group assessments.

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Weekly Lecture topics in Term 1

Week No	Topics focussed on best practices	Lecturer
1	Introduction, Computing Professional Responsibilities	PB
2	System Development Life Cycle	ME
3	Requirements	PB
4	Users, Usability and User Experience	ME
5	Accessibility	PB
6	Values in Computing	ME
7	Software Copyright Licensing	PB
8	Legal Frameworks	ME
9	System, Software and Human Failure	PB
10	Term 1 recap of topics	ME

The teaching team:

Term 1

Phil Benachour

Convenor in Term 1

Mo El-Haj

Terms 2&3

Elisa Rubegni

Convenor in Terms 2&3

Elmira Yadollahi

Where is InfoLab2?

Feedback

- How is feedback provided?
  - **For each group:** By teaching staff in the seminar sessions. You will be guided through and given feedback on tasks and activities that will provide the **building blocks** for your final group report
    - We will review your work in the seminars and provide feedback on your progress.
  - This is the best chance to clarify anything you don't understand.
  - **Overall/class:** by the academics (and/or via the class announcements). We will give provide feedback and any common mistakes/areas to improve, and updates on how the class is performing overall.

Please note! Group Seminars!

- You will be involved in round the table discussions, sharing research and Q%A sessions.
- You will be assigned group members
- You will be timetabled to attend a group seminar once every two weeks.
  - You will need to organise meetings outside of these sessions
- You will be submitting a group report (not presentations)

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What is Plagiarism?

- Passing off someone else's work as your own, including:
  - Submitting (e.g.) code that someone else wrote
  - Paying for someone else to do it for you
  - Working on a piece of non-group work together as a group, and submitting it as individual work
  - Sharing of code that you then possibly adapt
- If you **give someone else your work**, you can also be called in for plagiarism

What We Expect from You

Integrity (no plagiarism, no faking results) and effort (active learning):

- i.e. come to lectures, even early ones (it helps!)
- go to the seminars,tutorials, workshops and labs (these are compulsory!)
- get the textbook (if there is one) and use our/the world's resources effectively
- take notes (evidence handwritten are better!)
- read around the subject/try things for yourself
- ask us questions in lectures and seminars
- take notes (again, because the slides are not enough when you try to revise, really…!)
- plan your time and coursework carefully

What You can Expect from Us

We'll do our best

- to make all our lecture notes available on moodle
- To provide material on Moodle prior to each seminar
- to give you references to follow up and provide answers through the Moodle discussion forum
- to personally check the sessions are running smoothly: academics will lead each session and provide support
- to offer feedback on task and activities to provide the building blocks for your termly group assessment
  - Getting feedback during the sessions and in-person is more effective than emails!

What You can Expect from Us

- The seminar sessions are not just for doing the workbooks, they are contact time with us
- It is vital to attend the labs, as you will be working on material that may not have been covered in the lectures
- We are there to support you
- to respond to email (ideally as a last resort! - *note: we get more email than we can handle*, and have a lot of teaching/research/admin commitments, so are often *not* in our offices!)
- Please always use your Lancaster email for communication, (not your private email). Please do not use direct messaging via Teams ☺ Email and Moodle is sufficient.

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Professionalism and Ethics

- Professional issues are areas of debate about ethical or practical conduct that underpin good professional practice in a field.

- Ethics:
  - Derived from the Greek word “ethos”, or “a way of living”.
  - Ethics is a branch of **philosophy** that is concerned with human conduct, more specifically the behaviour of individuals in society.

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Technology and Ethics

- Technology design, manufacture, deployment and evaluation
  - Associated issues of responsibility, safety, security, risk, trust
    - Can be seen as ethical issues
    - Which also makes them social and professional issues

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Computing as a profession

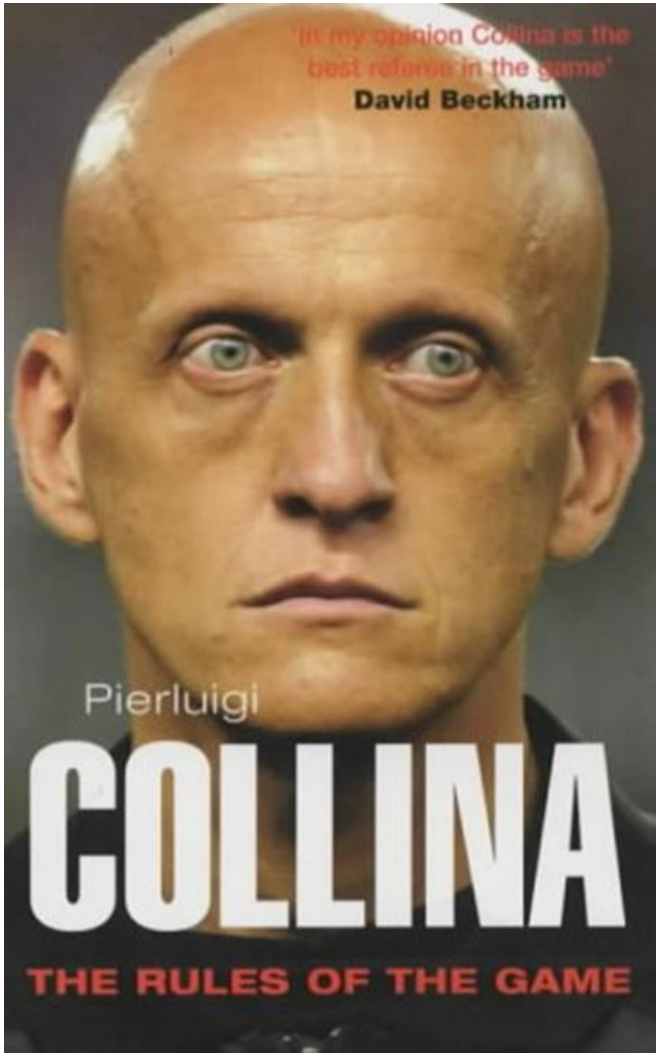
- What is meant by the term profession and professionalism?

Computing as a profession

- What is meant by the term profession and professionalism?
- The concept of a profession
- Royal charters
- Professional conduct
  - The public interest
  - Professional Competence and Integrity
  - Duty to Relevant Authority
  - Duty to the Profession

The concept of a Profession

- Thinking about the term profession-professional and what this means for different types of jobs.
- There is no single definition of a profession.
- Looking at a range of occupations: lawyers, doctors, dentists, accountants, veterinary surgeons, architects and so on – we see that there are common characteristics:
  - Accredit education & training
  - Organised into professional bodies
  - Members conduct activities in accordance with codes of conduct laid down by their bodies



Royal Charters

- In the UK, any organisation that believes its main objectives are in the public interest, can enter-into discussions with the Privy Council with a view to being awarded a royal charter.

- A royal charter is a formal document, written in rather quaint language and signed by the monarch, which establishes the organisation and lays down its purpose and rules of operation.

- BCS was awarded its royal charter in 1984. The Institution of Electrical Engineers IEE was awarded its first charter in 1921 and the IET received its charter in 2008, shortly after the merger between the IEE and IIE.

Professional conduct

- BCS charter specifically requires to establish and maintain a sound ethical foundation for the use of computers.
- Done by laying down a **code of conduct** (known as a **code of ethics**), a set of standards of behaviour, that members follow.
- A **code of conduct** is concerned with the relationship between members and society.

Professional conduct

- The Public Interest
- Professional Competence and Integrity
- Duty to Relevant Authority
- Duty to the Profession

Professional conduct:

Public Interest

- Be aware of and comply with aspects of the law and regulations that govern acting in the public interest.
  - Safeguard public health, protect the environment, have due regard for privacy, security and wellbeing of others.

- Rights of third parties, copyright and intellectual property.

Professional conduct:

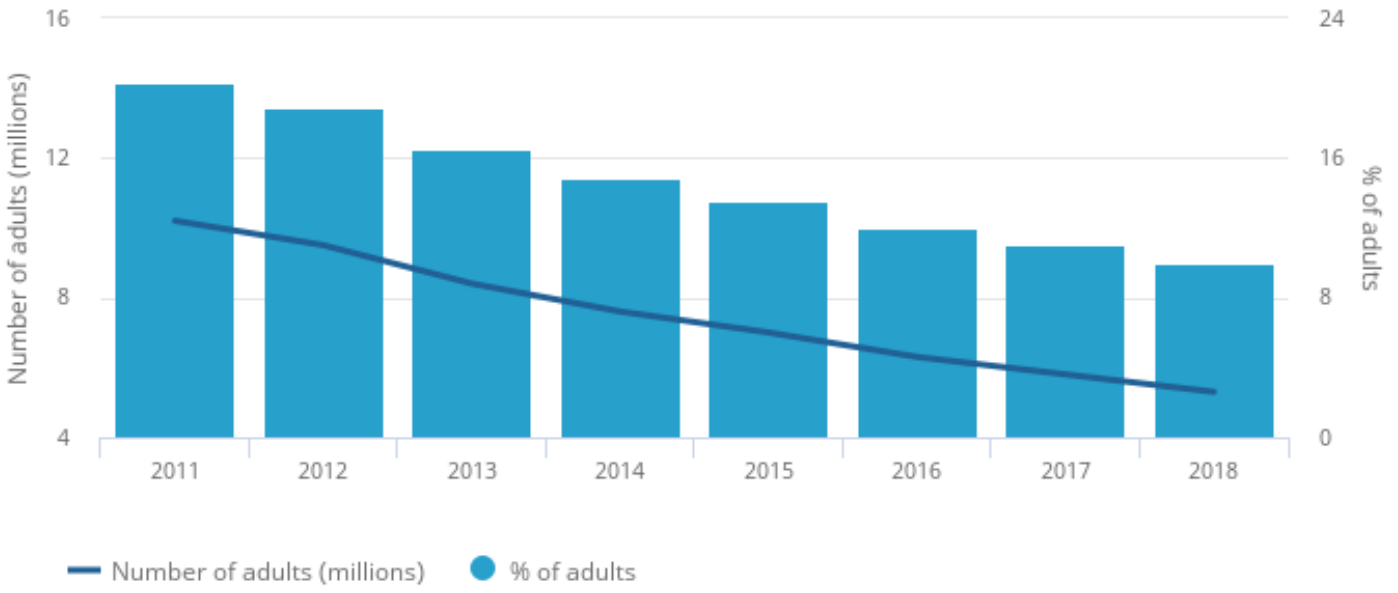
Public Interest

- Conduct professional activities without discrimination on the grounds of:
  - Sex, sexual orientation, marital status, nationality, colour, race, ethnic origin, religion, age or disability, or of any other condition or requirement.
- Promote equal access to the benefits of IT, inclusion.
  - Ensure that IT systems can be used by disabled people or helping to develop IT skills in groups of people who do not have them.

Digital divide-digital exclusion

Figure 1: The number of internet non-users has declined over time

Number (millions) and percentage of adult internet non-users, UK, 2011 to 2018



Source: Office for National Statistics - Internet Users, Labour Force Survey (LFS)

Professional conduct:

Professional Competence and Integrity

- Continuous professional development.
- Being familiar with legislation:
  - When Building a Web-based e-commerce application for a retail company, software developers are required to be conversant with legislation such as the Consumer Contracts (Information, Cancellation and Additional Charges) Regulations 2013
  - A software engineer working on a railway signalling system should be familiar with the regulations laid down by the Rail Safety and Standards Board.

Professional conduct:

Professional Competence and Integrity

- Undertake project work with professional competence.
  - Example: “Failure of the London Ambulance Service’s Computer Aided Dispatch System”
  - https://www.youtube.com/watch?v=Hu6NGGHpUtw

Oct. 26, 1992: Software Glitch Cripples Ambulance Service

OCT. 26, 1992: SOFTWARE GLITCH CRIPPLES AMBULANCE SERVICE

1992: A software error causes London’s brand new computer-aided ambulance-dispatch system to fail. The ensuing snafu is blamed for anywhere between 30 and 45 deaths.

Professional conduct:

Duty to Relevant Authority

- Carry out professional duties with due care and diligence in accordance with the relevant authority's requirements.
- Behaving professionally:
  - Conflict of interest
  - Disclosing confidential information without permission
  - Misrepresentation or withholding information

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Professional conduct:

Duty to the Profession

- Setting members' expectations to uphold the reputation and good standing of BCS in particular, and profession in general.
- The duty to support colleagues and help them to develop their skills.
- The need to take responsibility for those that we are managing and help guide their development.

ACM Code of Ethics and Professional Conduct: https://www.acm.org/code-of-ethics

- ***General Ethical Principles: A computing professional should...***
  - Contribute to society and to human well-being, acknowledging that all people are stakeholders in computing.
  - Avoid harm.
  - Be honest and trustworthy.
  - Be fair and take action not to discriminate.
  - Respect the work required to produce new ideas, inventions, creative works, and computing artifacts.
  - Respect privacy.
  - Honor confidentiality.

ACM Code of Ethics and Professional Conduct: https://www.acm.org/code-of-ethics

- ***Professional Responsibilities: A computing professional should…***
  - Strive to achieve high quality in both the processes and products of professional work.
  - Maintain high standards of professional competence, conduct, and ethical practice.
  - Know and respect existing rules pertaining to professional work.
  - Accept and provide appropriate professional review.
  - Give comprehensive and thorough evaluations of computer systems and their impacts, including analysis of possible risks.

ACM Code of Ethics and Professional Conduct: https://www.acm.org/code-of-ethics

- ***Professional Responsibilities: A computing professional should…***
  - Perform work only in areas of competence.
  - Foster public awareness and understanding of computing, related technologies, and their consequences.
  - Access computing and communication resources only when authorized or when compelled by the public good.
  - Design and implement systems that are robustly and usably secure.

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Technology and Philosophy

- Philosophy as a way of thinking
- Philosophy and Ultimate questions:
  - The meaning of life, good and evil, personal identity, knowledge and certainty
  - Why be moral?
  - Why be a computing professional?
- Different philosophical bases for morality
  - Teleológica (Consequentialism) vs deontological
  - Kill 1 to Save 5? Consequentialism vs. Deontology
    - https://www.youtube.com/watch?v=NT3VU4B5Dsc

Applying Ethical Philosophies

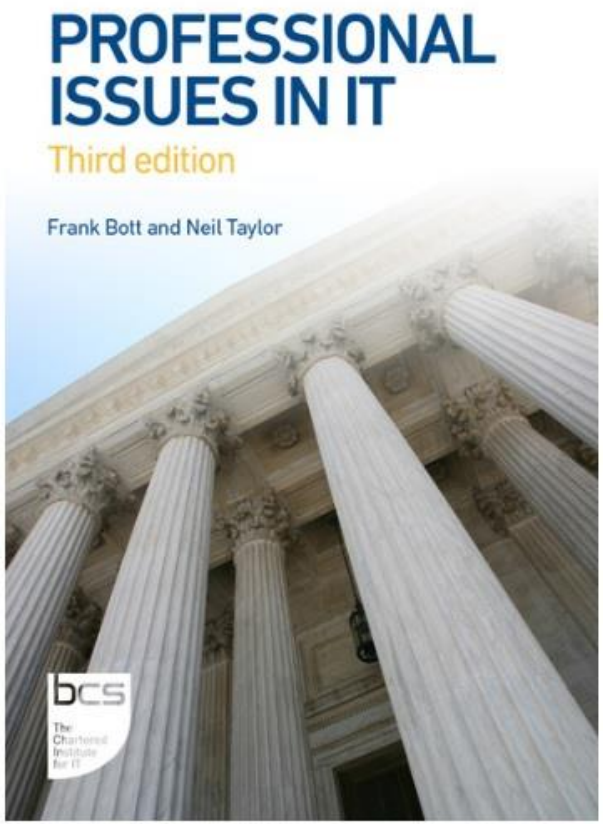
- In Business
  - Understanding failure
  - Whistleblowing
- In Research
  - Issues of informed consent

Resources

Professional Issues in IT, 3rd Edition

Write the first review

By Frank Bott, Neil Taylor



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