MSc in Computer Science & Year in Computer Science (ICY)

Uday S. Reddy
Programme Director
School of Computer Science
University of Birmingham
What is MSc Comptuer Science?

• It is a one-year course.
  – Meant for students from non-Computer Science disciplines.
  – If you already have a Computer Science degree, you need to talk to me.

• University of Birmingham started offering it in 1968 (probably the oldest such programme in UK)

• We take roughly 200 students per year, may be more this year!
Why study Computer Science?

• Computers are everywhere!
  – Arts, sciences, engineering, medicine, business, …
  – Manufacturing, Services, Control, …

• No matter what job you choose to do, you are likely to use computers in it.

• No matter what life you choose, there are going to be computers in it.
Why study Computer Science?

• Computer Science is **fun**!
• You get to be creative in making the computer do what you want, and get to see the results within minutes.
• Computer Science is also **challenging**!
• The computer is incredibly dumb, and getting it do what we want, builds:
  – Logical thinking.
  – Analytical skills.
  – Imagination.
  – Ability to predict, understand, and control processes.
Why study Computer Science?

Code.org
School of Computer Science

• One of the oldest CS departments in the country (50+ years).
• World-leading academics that have joined us from all over the world.
• Lively and friendly place to teach and learn.
• Attractive building, well-managed facilities.
• Last three years have been challenging due to the pandemic.
  – We are back to normal functioning this year.
  – We have also adopted newer methods of teaching, which we use when appropriate.
School of Computer Science

• Rankings:
  – Guardian: 1st in 2013, 8th in 2017, 17th in 2021
  – Times: 9th in 2022, 8th in 2023

• Among the best departments for
  – student satisfaction in the NSS,
  – Teaching Evaluation Framework, and
  – graduate employability.
Structure of the MSc CS course

- Total 120 credits of courses + 60 credits project
  - Software Workshop 1 and 2 (40 credits, 2 semesters)
    - Intensive programming course using Java and Python.
    - Also associated languages for web and databases.
    - Weekly lectures and tutorials.
    - Weekly exercises.
  - Computer Systems (20 credits)
    - Deals with how computers work
    - Both in hardware and “system software”.
    - Computer networks
  - Data Structures, Algorithms and Databases (20 credits)
    - The principles underlying programming and design.
Structure of the course (contd)

- Total 120 credits of courses + 60 credits project
  - Building Usable Software (20 credits)
    - “How to do it well”
    - Interfacing with human users and social media aspects
    - Software development process (other than programming):
      requirements, prototypes, project management, testing, maintenance
  - Artificial Intelligence and Machine Learning (20 credits)
    - Letting programs do things for us “on their own”
    - Human-like abilities: seeing, hearing, planning, moving
    - Learning capabilities so that we don’t have to program everything.
Structure of the course (lastly)

- Total 120 credits of courses + 60 credits project
  - Final project (60 credits)
    - To be done in summer (June-September)
    - On a topic of your choice, under the guidance of a supervisor.
    - Put into practice all that you have learnt in your course.
    - You do it yourself from the beginning to end
    - Conception, planning, design, implementation, testing, getting user feedback etc.
    - Write a report (or “dissertation”)
    - Marked by your supervisor and another lecturer, jointly arriving at a mark.
Practical issues (1)

• Information and Help
  – Student Handbook
    • On Canvas
    • https://canvas.bham.ac.uk/courses/68178
    • Look under “Programme information” for degree-specific information.
  – Education Support Office (Reception desk)
Practical issues (2)

• Teaching materials
  – Made available on Canvas
  – canvas.bham.ac.uk
  – All registered students will have access to the courses they have registered for.
  – Syllabus, teaching videos, exercises, announcements, discussion boards, email.
  – You also submit course work on Canvas and receive feedback.
Practical issues (3)

• Personal advisor/tutor
  – Every one of you will be assigned a lecturer as a personal advisor.
  – You will meet them at least once a term, perhaps more often.
    • to review progress, address any difficulties, or to ask any questions that nobody has answers to.
  – If they don’t have answers, you come to me!
    • Uday Reddy
    • Room 210, Computer Science building
Practical issues (4)

• Well-being / Welfare team
  – Look for “Support” on the Student Handbook.
  – If anything goes wrong with your studies (illness, family emergencies), please contact them immediately.
  – You normally hear back within 24 hours.
Practical issues (5)

• COVID times
  – Even though we are hoping to return to normal operation this year, we cannot predict all contingencies.
  – Please be on the look out for emergency announcements, schedule changes etc.
  – If you run into any issues, please contact the school reception desk or me.
Keep in mind

- It is **12 month course**.
  - No breaks!
  - During the Christmas break, you would need to revise for the semester exams.
  - Same for the Easter break.
  - Right after the second semester exams, you will need to start your final project.
Graduation requirements (1)

• MSc Students
  – Pass mark is 50%.
  – Must pass at least 80 credits out of 120.
  – Minimum of 40% on every module.
  – Must achieve an overall average mark of 50%.
• If you do not pass the May exam, you can have another attempt in September.
• But Only One Attempt!
Graduation requirements (2)

• Resit or Repeat
  – Resit: Attempt the final exam again.
  – Repeat: Return next year to take the module again.
  – I will have a meeting with everybody that needs advice after the May exams.
• Enjoy the School and the course!
• All the best!!!