THE UNIVERSITY of EDINBURGH

Postgraduate Virtual
Open Days

Computer Science MSc

Dr Antonio Barbalace
Computer Science MSc Programme Director

EDINBURGH
Extraordinary futures await

Computer Science MSc Program: Courses

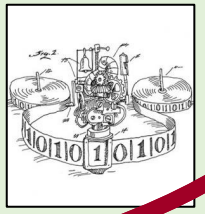
"Spans the range from computer ~~architecture~~systems through theoretical computer science."

CS Foundations, Systems and Software (60-100 credits)









Collection of **22** preselected courses

Collection of **14** preselected courses

CS non-Foundations, Systems and Software (0-40 credits)

a) ML/AI, Ethics
b) NLP, Speech
c) Bioinformatics, Neuroscience
d) Computational, Data Science

Programming (0-10 credits)

Programming Skills (10 credits)

Informatics and Math (0-20 credits)

a) Must be level 10
b) Several systems and theory courses are suggested

Courses in all Schools (0-20 credits)

a) Includes Informatics and Math
b) No Medicine, Veterinary Studies, or COL

Computer Science MSc Program: FSS Courses

"Spans the range from computer ~~architecture~~systems through theoretical computer science."

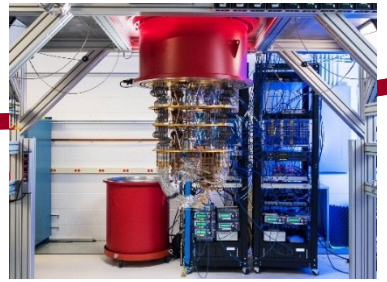
Databases and Data Management

Human-Computer Interaction and Design

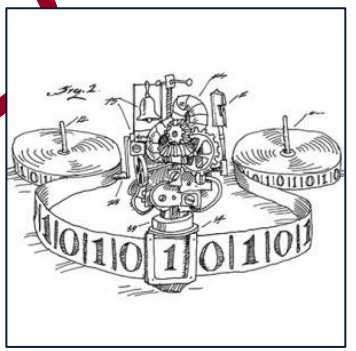
Software Engineering

Computer Systems
HPC, Cloud, Edge, IoT

Cyber Security and Privacy



Quantum Informatics



Theoretical Computer Science

MSc Courses:
Computer Systems

"Spans the range from computer systems through theoretical computer science."

- Theory and the practice of designing, optimising and programming computer systems
  - Internet of Things (IoT)
  - Cloud and Edge
  - High Performance Computation (HPC)

Principles and Design of IoT Systems

Applied Cloud Programming*

Machine Learning Systems

Parallel Programming Languages and Systems

Distributed Systems*

MSc Courses:
Cyber Security and Privacy

"Spans the range from computer systems through theoretical computer science."

- Cyber Security
  - Protecting computers and their data against malicious or accidental damage
- Privacy
  - Limiting personal information and protecting it from abuse, even when data is shared
- Blockchain

Blockchain and Distributed Ledgers

Secure Programming

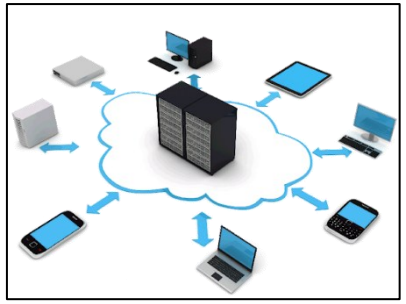
Introduction to Modern Cryptography

Quantum Cyber Security

Usable Security and Privacy

MSc Courses:
Databases and Data Management

"Spans the range from computer systems through theoretical computer science."



- Theoretical analysis of database systems
  - Data structures
- Algorithms for dealing with big data
- Practical approaches for dealing with distributed data

Advanced Database Systems

Machine Learning Systems

Distributed Systems

Modelling Concurrent Systems

MSc Courses:
Software Engineering

"Spans the range from computer systems through theoretical computer science."

- Software usability and design
- Software quality control
  - Testing
  - Formal verification
- Software management

Applied Cloud Programming

Computer Graphics: Rendering

Computer Graphics: Geometry and Simulation

Text Technologies for Data Science

MSc Courses:
Human-Computer Interaction

"Spans the range from computer systems through theoretical computer science."

- Theoretical and practical aspects of a human centered approach to design computer software, systems and interfaces
  - Design with users in mind
  - Evaluate existing systems' usability

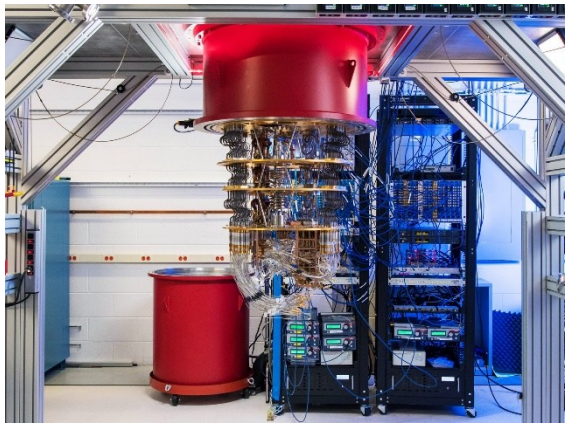
Case studies in Design Informatics 1

Human-Computer Interaction

Usable security and Privacy

MSc Courses:
Quantum Informatics

"Spans the range from computer systems through theoretical computer science."



- Exploiting quantum effects to manipulate information in novel ways
  - Quantum Information Theory (Physics)
  - Communication
  - Computation
  - Security

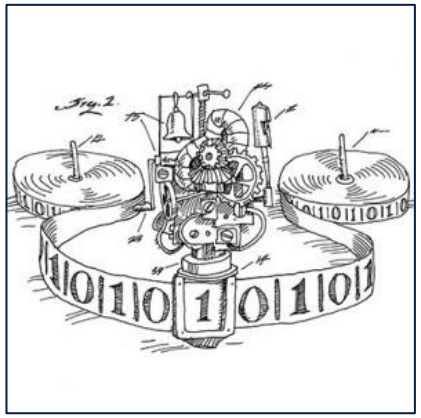
Introduction to Quantum Computing

Introduction to Quantum Programming and Semantics

Quantum Cyber Security

MSc Courses:
Theoretical Computer Science

"Spans the range from computer systems through theoretical computer science."



- What is Computation?
  - Design of new Algorithms
- How can we know whether our algorithm is the fastest?
  - Computation Complexity

Types and Semantics for Programming Languages

Machine Learning Theory

Algorithmic Game Theory and its Applications

Modelling Concurrent Systems

Security and privacy **courses**

Quantum Informatics **courses**

Credits Breakdown

Computer Science MSc (180 credits)

Mandatory courses (80 credits)

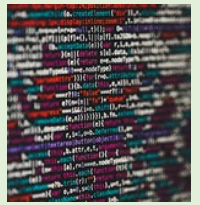
Informatics Project Proposal (IPP, S2, 10 credits)

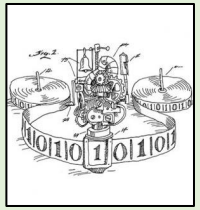
Informatics Research Review (IRR, S1, 10 credits)

MSc Dissertation (Summer 60 credits)

CS Foundations, Systems and Software (60-100 credits)





Programming (0-10 credits)

Programming Skills (10 credits)

CS non-Foundations, Systems and Software (0-40 credits)

a) ML/AI, Ethics
b) NLP, Speech
c) Bioinformatics, Neuroscience
d) Computational, Data Science

Informatics and Math (0-20 credits)

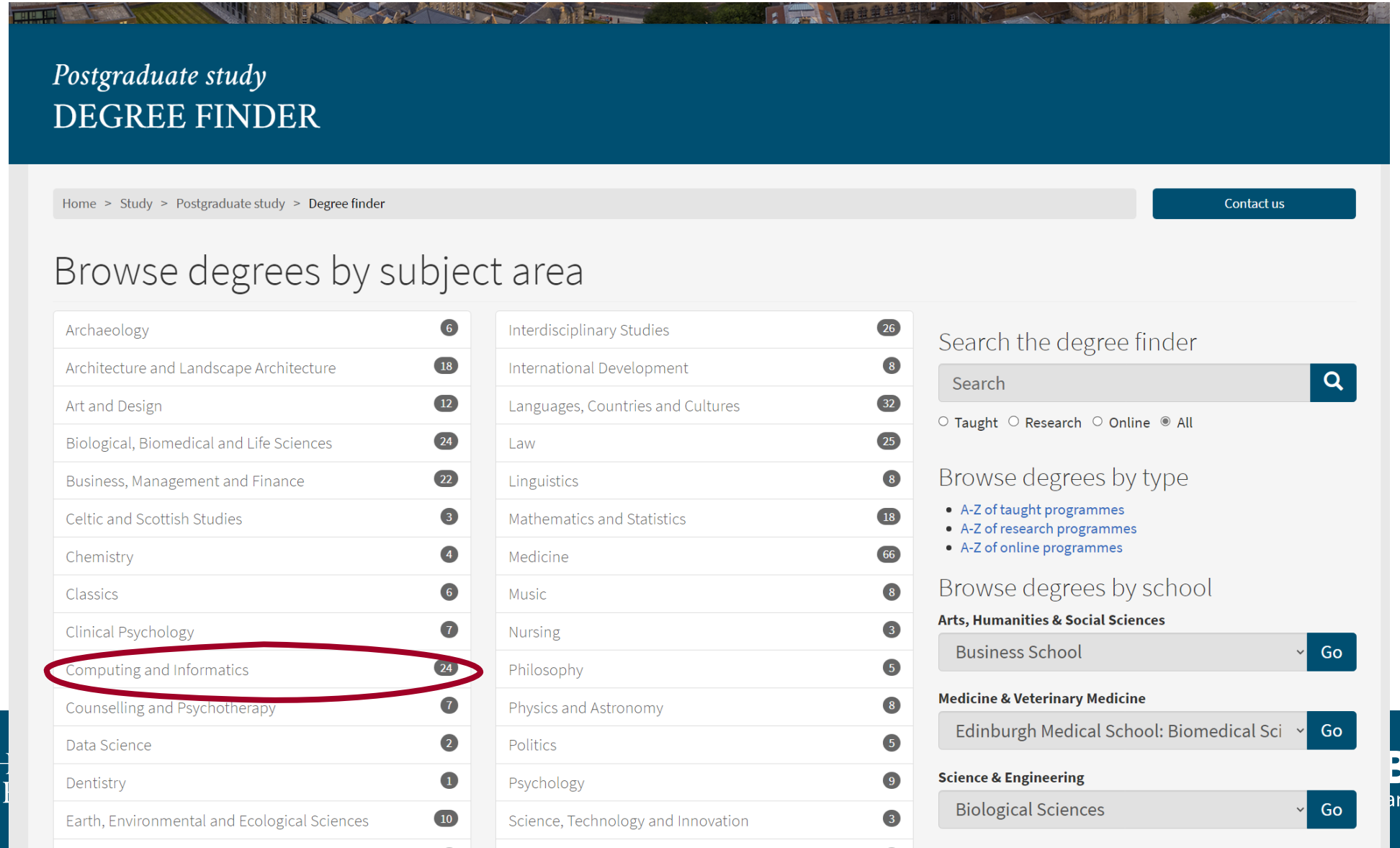
a) Must be level 10
b) Several systems and theory courses are suggested

Courses in all Schools (0-20 credits)

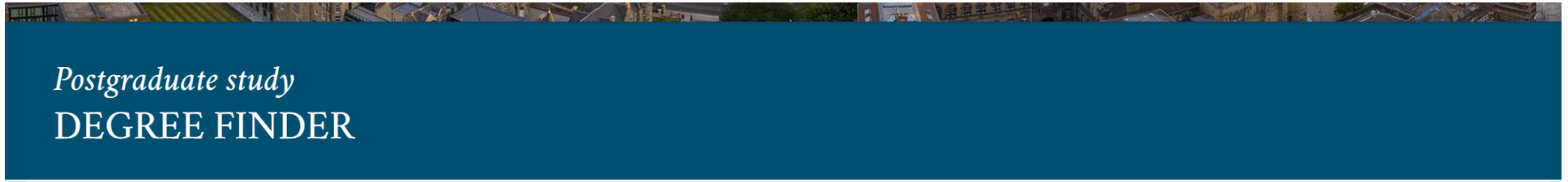
a) Includes Informatics and Math
b) No Medicine, Veterinary Studies, or COL

https://www.ed.ac.uk/studying/postgraduate/degrees

Additional Information (1/4)



Additional Information (2/4)



Postgraduate study
DEGREE FINDER

Home > Study > Postgraduate study > Degree finder > Subject: Computing and Informatics

Contact us

Subject area: Computing and Informatics

Taught programmes

- Advanced Technology for Financial Computing MSc
- Artificial Intelligence MSc
- Cognitive Science MSc
- Computer Science MSc
- Cyber Security, Privacy and Trust MSc
- Data Science MSc
- Design Informatics MSc
- High Performance Computing MSc, PgDip
- High Performance Computing (Online Learning) MSc, online PgDip (ICL), PgCert (ICL), PgProfDev
- High Performance Computing with Data Science MSc
- High Performance Computing with Data Science (Online Learning) online MSc, PgDip (ICL), PgCert (ICL), PgProfDev
- Imaging, Vision and High Performance Computing MSc

Research programmes

- Centre for Doctoral Training in Artificial Intelligence for Biomedical Innovation PhD with Integrated Study
- Centre for Doctoral Training in Designing Responsible Natural Language Processing PhD with Integrated Study
- Centre for Doctoral Training in Machine Learning Systems PhD with Integrated Study
- Centre for Doctoral Training in Quantum Informatics PhD with Integrated Study
- Cyber Security, Privacy and Trust PhD
- EPCC: High Performance Computing, Computational & Data Science, Software Engineering PhD
- Informatics: AIAI: Foundations and Applications of Artificial Intelligence, Automated Reasoning, Agents, Data Intensive Research PhD, MScR
- Informatics: ANC: Machine Learning, Computational Neuroscience, Computational Biology PhD, MScR

Search the degree finder

Search

Taught Research Online All

Browse degrees by type

- A-Z of taught programmes
- A-Z of research programmes
- A-Z of online programmes

Browse degrees by school

Arts, Humanities & Social Sciences

Business School Go

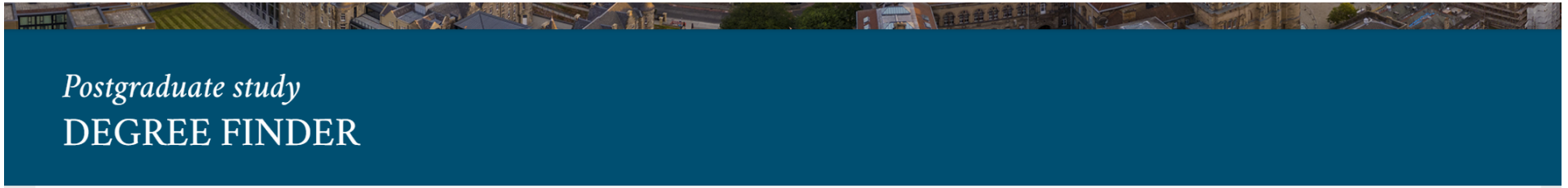
Medicine & Veterinary Medicine

Edinburgh Medical School: Biomedical Sci Go

Science & Engineering

Biological Sciences Go

Additional Information (3/4)



Postgraduate study
DEGREE FINDER

Home > Study > Postgraduate study > Degree finder > Subject: Computing and Informatics > Computer Science MSc

Contact us

Computer Science MSc

Awards: MSc
Study modes: Full-time, Part-time
Programme website: Computer Science

£ Funding opportunities

Expand all Contract all

Programme description

Edinburgh's long-established expertise in core computer science is recognised internationally and spans the range from computer architecture to theoretical computer science.

This master's degree offers you the opportunity to obtain specialist knowledge in the design, analysis, implementation, and use of computer systems ranging from the components of a single processor to computer networks as vast as the Internet.

You can also pursue a more theoretical direction by choosing courses in areas such as:

- algorithms
- programming languages
- cryptography
- quantum informatics

The programme provides a solid foundation in theoretical understanding and a wide variety of practical techniques applicable in many career settings.

Reputation

Postgraduate Virtual Open Days

Join us online on 12 to 14 November where you can learn more about postgraduate study through webinars, live panel sessions, and one-to-one chat.

Find out more and register

Applying

Select your programme and preferred start date to begin your application.

MSc Computer Science - 1 Year (Full-time)
Select your start date Apply

MSc Computer Science - 2 Years (Part-time)
Select your start date Apply

MSc Computer Science - 3 Years (Part-time)
Select your start date Apply

Application deadlines

Additional Information (4/4)

Programme structure

You will follow two taught semesters of lectures, tutorials, project work and written assignments (September to May). During this time you will also learn research methods (such as literature review and project planning) to prepare for your final project and dissertation, which is completed during the summer.

Courses

Around half your taught course credits must be chosen from areas in core computer science (foundations and systems). Course offerings follow the main research areas of our staff, which include:

- parallelism and distributed systems
- security and privacy
- programming languages
- theoretical computer science
- quantum informatics

Example courses offered recently in computer science foundations and systems include:

- Advanced Databases Systems
- Blockchains and Distributed Ledgers
- Computational Complexity
- Computer Networking
- Distributed Systems
- Internet of Things: Systems, Security, and the Cloud
- Introduction to Quantum Computing
- Parallel Programming Languages and Systems
- Secure Programming

For your remaining courses, you may choose further options from foundations and systems or from a wide range of courses offered in other areas of Informatics, including:

- artificial intelligence
- software engineering
- social and biological computation

Guidance is provided to help you choose a set of courses that work well together, giving you specialised expertise in your chosen area.

Please note: This degree has flexible course options. Students are only admitted onto the degree if they will have a viable set of options, but not all courses on offer are appropriate for all admitted students. The School of Informatics offers a wide selection of courses, but not all optional courses are guaranteed to run every year, and a few high-demand courses may limit enrollment to students on the most relevant degree(s).

MSc Computer Science - 1 Year (Full-time)

Select your start date | Apply

MSc Computer Science - 2 Years (Part-time)

Select your start date | Apply

MSc Computer Science - 3 Years (Part-time)

Select your start date | Apply

Application deadlines

How to apply

Featured funding

Further information

Admissions Contact (lines open Mon-Fri 10am-4pm)
Phone: +44 (0)131 650 5737
Contact: College of Science & Engineering Admissions Enquiries
Programme Contact
Contact: futurestudents@ed.ac.uk
School of Informatics
11 Crichton Street
Central Campus
Edinburgh
EH8 9LE
Programme: Computer Science
School: Informatics
College: Science & Engineering

http://www.drps.ed.ac.uk/24-25/dpt/ptmsccmpsi1f.htm

Resources: Program Structure

Degree Programme Table: Computer Science (MSc) (Full-time) (PTMSCCMPSI1F)

Jump to: Year 1

Year 1 Academic year: 2024/25, Starting in: September

NOTES:
Before making your course choices make sure you have discussed them with your Student Adviser, or someone in your student support team.

Compulsory courses

You must take these courses

MSc Dissertation (Informatics) Must be passed at 50%	Informatics Research Review	Informatics Project Proposal
INFR11077 60 credits	INFR11136 10 credits	INFR11147 10 credits

Course options

Group A

Select exactly 100 credits in this group.

Informatics MSc FSS Courses

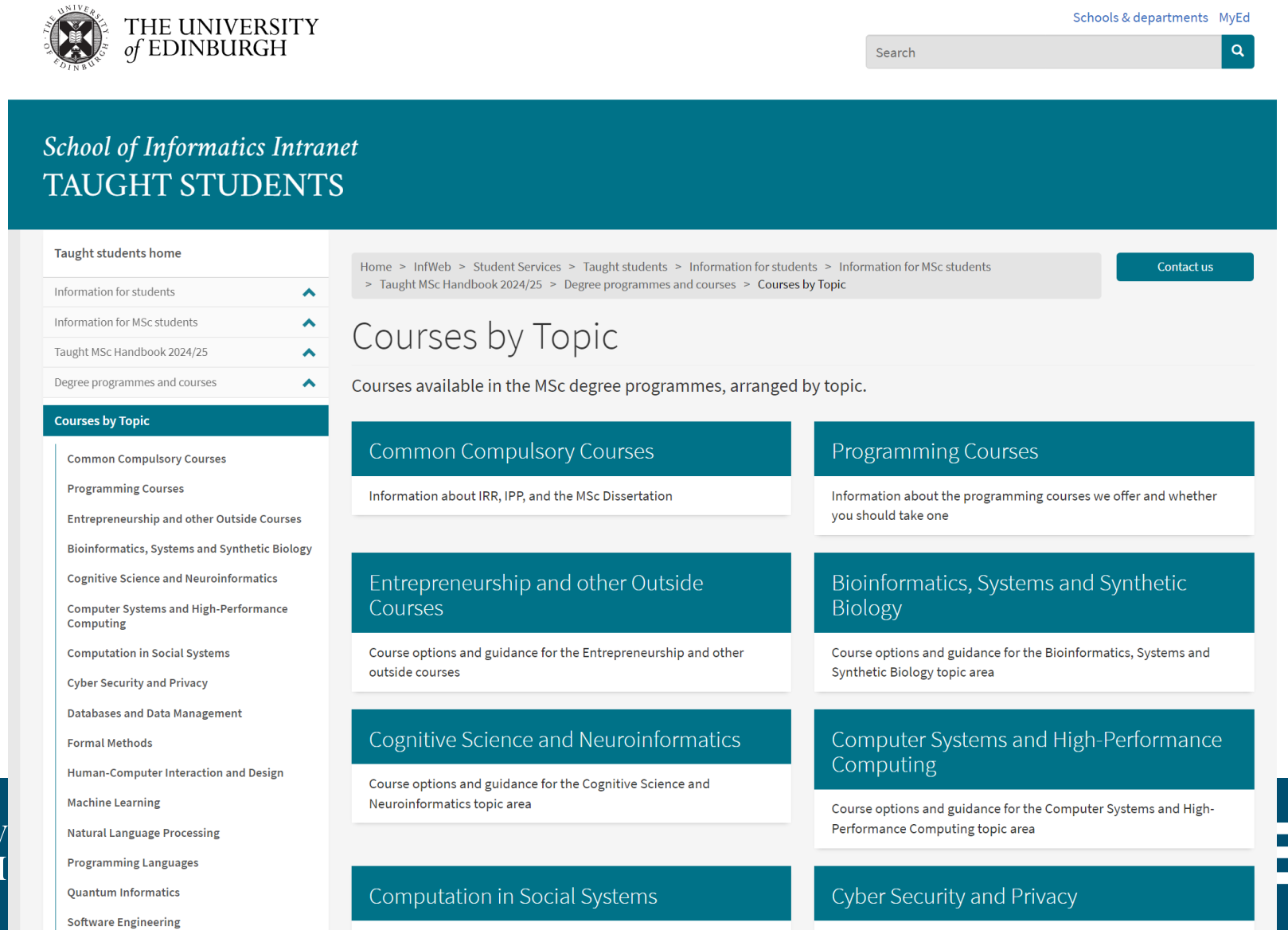
Select between 60 and 100 credits of the following courses

NOTES:
These are CS Foundations, Systems and Software courses at Level 11 open to taught postgraduate students.

Human-Computer Interaction (Level 11)	Algorithmic Game Theory and its Applications	Distributed Systems (Level 11)	Parallel Programming Languages and Systems (Level 11)

https://web.inf.ed.ac.uk/infweb/student-services/taught-students/information-for-students/information-for-msc-students/taught-msc-handbook-2024-25/degree-programmes-courses/topics

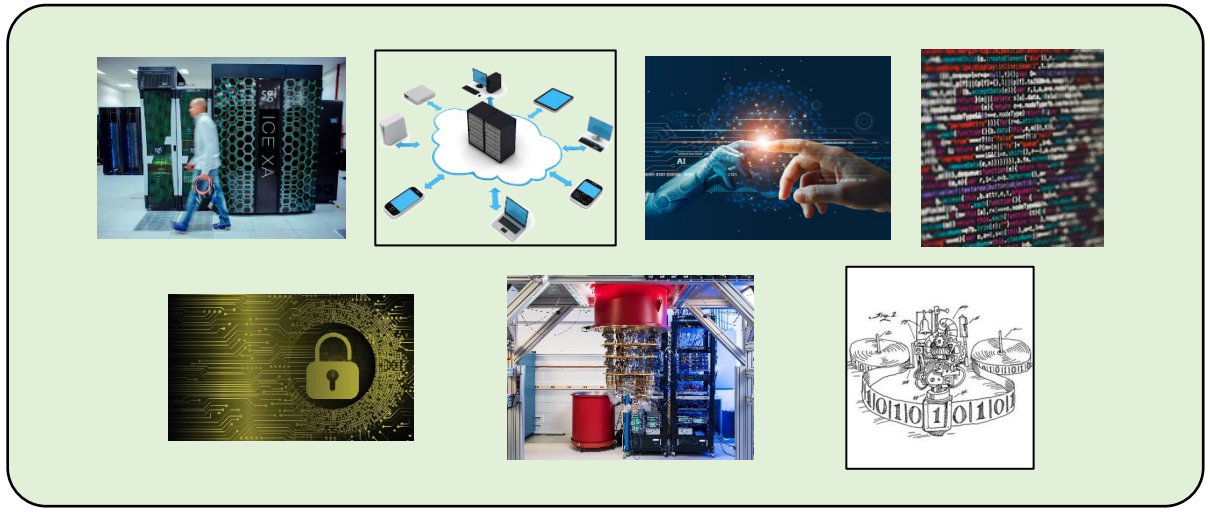
Resource: MSc Handbook



When a MSc in Computer Science?

"Spans the range from computer systems through theoretical computer science."

- Interest in:
  - Computer Systems
  - Database and Data Management
  - Human-Computer Interaction
  - Software Engineering
  - Cyber Security and Privacy
  - Quantum
  - Theoretical Computer Science
- You want a broad perspective
- You may not know yet exactly which niche fits you best …



… a versatile MSc!

Thanks for listening! Questions?

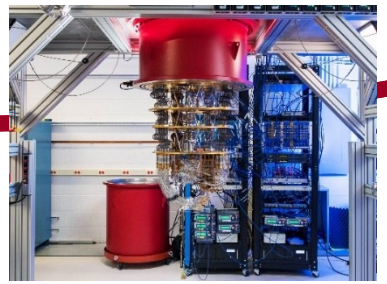
Databases and Data Management

Human-Computer Interaction and Design

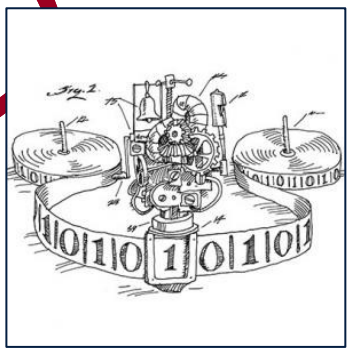
Software Engineering

Computer Systems
HPC, Cloud, Edge, IoT

Cyber Security and Privacy



Quantum Informatics



Theoretical Computer Science

Did you get the info you were looking for?

- Programme-specific info: https://postgraduate.degrees.ed.ac.uk/
- Chat to our Students: https://edin.ac/student-chat-pg
- Any other questions (including, Fees & Admissions) email: futurestudents@ed.ac.uk
- Read our students' blogs at https://blogs.ed.ac.uk/studentstories/

THE UNIVERSITY *of* EDINBURGH

Thank you

EDINBURGH
Extraordinary futures await