BHASVIC

Guide to Higher Education

Computer games design and programming

Computer science

Information systems

Software engineering

What to ask on any Computing-related open day

Interested in studying computer science at university? Print out our list of questions when you're on an open day to help you get all the information you need about the course.

About the course

- Are my teachers also practitioners?
- How much of this course is based on theory?
- How much of the course is practical application?

Facilities and equipment

- What books/equipment is necessary for me to buy?
- How much time will I need to spend in the library/labs each week?

Placements and work experience

- Are there any industrial placements?
- Do I have to organise my own or will I have help?
- Is there a chance for me to study abroad?

Assessment

- What is the split between exam/ coursework/ group works/ presentations?
- Do I need to complete a dissertation/ research based project?
- What is the weighting for each part/year of the course?

Computer science graduate prospects

- How would you increase your experiences of software and technology through university? Can you do an intercalated year of computer science?
- Does the uni have contacts in industry?
- Will companies take on interns from this course?

Computer games design and programming courses

If you love gaming why not turn this passion into a career in the dynamic interactive media industry? Most computer games courses give you the opportunity to gain design, technical and business skills, with modules in computer animation and 3D modelling, game analysis and testing and game production. Some courses focus more on games design and need creative thinkers; others focus on programming and the technical side, and would suit computer literate students with ability in maths.

- BSC
- VOCATIONAL
- COMMUNICATION SKILLS
- BA
- COURSEWORK-INTENSIVE
- COMPUTER-LITERATE
- TECHNICAL
- INTERACTIVE MEDIA
- DIGITAL GAMES
- ANIMATION

Example course modules

- Computer systems
- Digital graphics
- 3D modelling
- Drawing concept art for computer games
- Stop motion animation
- Multimedia design
- Developing computer games
- Object-orientated design for computer games
- Website production
- 2D animation production

Teaching hours / week

The time you'll spend in lectures and seminars each week will vary from university to university, so use this as a guide.

Average all subjects 14 hours → **Average this subject 15 hours** → **Slightly above average**
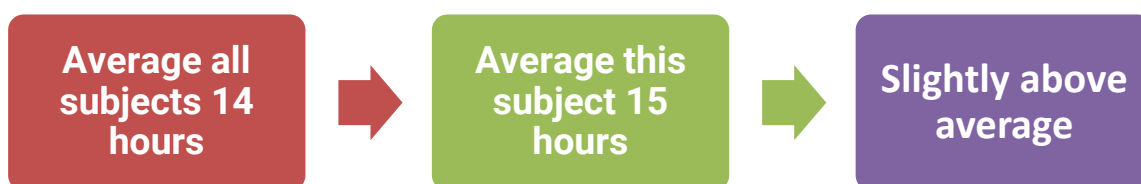
League tables for this subject

[The Guardian](#) [The Complete University Guide](#) [The Times](#)

What students say about computer games design and programming

The content, my course being a games one, is programming-heavy, with some maths skills required. The majority of the work is practical programming, but there are some exams for certain subjects. My games course has access

to one of the few labs with development units for the PlayStation 3, and there are many standard computer labs we can use too.

3rd year, Sheffield Hallam University

I'm a programming student, so my classes are about 20% lectures and 80% practical work. Most of my work is done in the computer labs, and is mostly practical with a bit of writing needed. For my main class, it's very teamwork-orientated.

2nd year, Glasgow Caledonian University

A-levels (or equivalent) usually required

- Maths (sometimes)

Useful to have

- Visual Arts
- Physics
- Computing
- ICT

Application checklist

Here's a guide to what to expect from the application process - also check individual university entry requirements, as these may differ.

- January application
- Personal statement

Examples of degrees and combined degrees for BHASVIC student's 2019 entry

- Computer Games (Software Development)
- Creative Technologies and Design (with a foundation year)
- Game Art

See also Computer Science

Transferable skills

Teamwork, IT & Technology, Problem solving, Social Skills, Organisation, Numeracy, Communication, Attention to detail, Creative thinking, Analytics, Project Management

Career prospects

This is a newly-classified subject area for this kind of data, so we don't currently have very much information to display or analyse yet. Gaming is a growing industry, and over time we can expect more students to study gaming-related degrees – and there could be new opportunities that open up for graduates in these subjects as the economy develops over the next few years.

Computer science courses

Would you like to play a part in the exciting and rapid changes in communication systems that impact on our daily lives? Do cutting-edge technologies such as 3D graphics, virtual reality and artificial intelligence appeal? You'll learn how computer programmes work, how users interact with them and design new systems using programming languages. Computer science graduates are in demand and you could work for a global technology company or areas such as finance, media or business.

Example degrees: Computer science, Software engineering, Computer networks, Artificial intelligence, Cyber security, Games development

- MATHS
- BSC
- VOCATIONAL
- PRACTICAL PLACEMENTS
- TIME IN LABS
- PROBLEM-BASED LEARNING
- MATHEMATICAL NUMBER-CRUNCHING
- SCIENCE
- COMPUTER-LITERATE
- HIGHLY-TECHNICAL

Example course modules

- Organisational behaviour in practice
- Principles of programming
- Data management
- Mathematics for computer science
- Languages and computability
- Fundamentals of design
- PC technology
- Image processing
- Software systems development
- Human computer interaction

Teaching hours / week

The time you'll spend in lectures and seminars each week will vary from university to university, so use this as a guide.

Average all subjects 14 hours → **Average this subject 15 hours** → **Slightly above average**
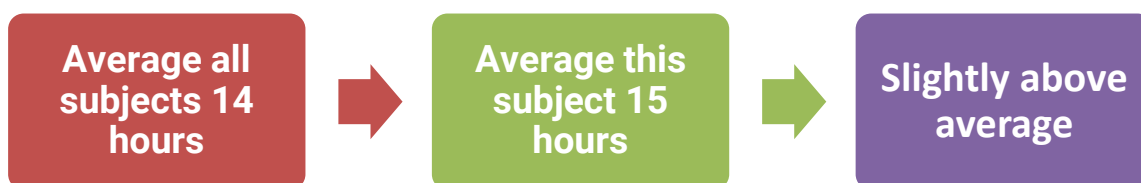
League tables for this subject

[The Guardian](#) [The Complete University Guide](#) [The Times](#)

What students say about computer science

On my computer science course, we have three types of teaching: labs, lectures and example classes. Labs are marked and you have demonstrators in each lab session to help you with the practical work. We have one or two lectures per week per course unit. In example classes, you have to do by yourself some similar examples to the ones explained in the lectures. The course is very interesting.

2nd year, University of Manchester

I'm doing computer science. If you haven't done programming before then it is quite challenging to start off with, but you get lots of help and support and it starts very basically. If you have done programming before then the first semester of programming will likely be quite easy. Programming is quite fun and you make a few programs of increasing complexity through the first year. Software engineering is about getting you familiar with how software is developed in industry. A lot of the first year maths is A-level maths, but there are a few extra things you have to learn.

1st year, University of Bath

On average I have four lectures per week - each of three hours - with additional hours (two-four extra hours) for practicals (lab sessions on programming, small group tutorials for a module). The content of my course consists of programming, some theory and some maths/logic modules. As someone who likes maths and found a likeness for programming in the first semester of my course, I find the content really interesting.

2nd year, King's College London, University of London

A-levels (or equivalent) usually required

- Maths (sometimes)

Useful to have

- Computing
- Further maths
- Physics
- Philosophy
- ICT

Application checklist

Here's a guide to what to expect from the application process - also check individual university entry requirements, as these may differ.

- January application
- Personal statement

In Sept 2019, 46 BHASVIC students went onto study Computing-related degrees at 29 different universities

Computing degrees often combine with other subjects including Maths, Media and Graphics.

Students can study a variety of Computing and IT qualifications at BHASVIC through both A-level and BTECs.

UNIVERSITY ENTRIES 2019 COMPUTING
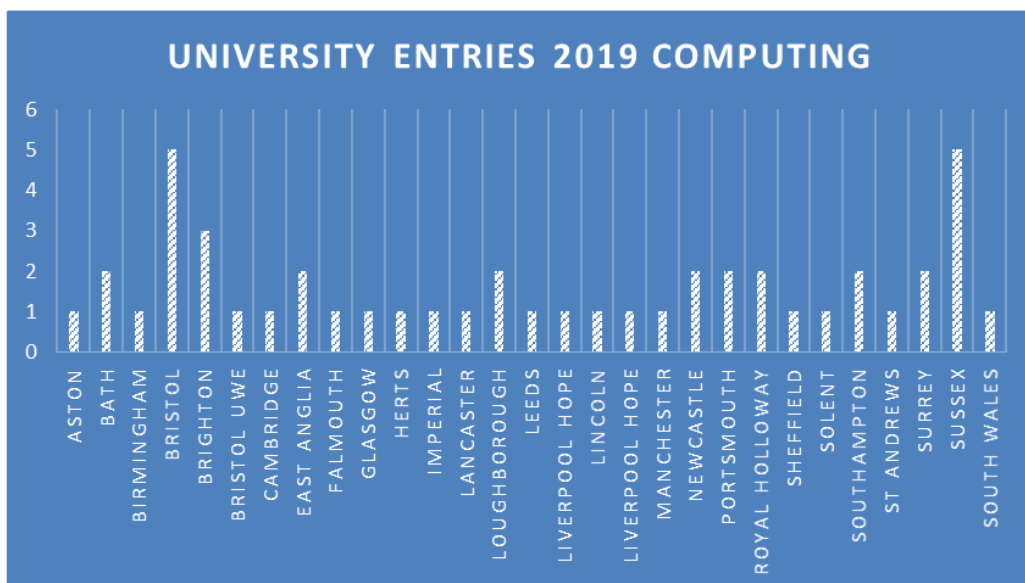
Top 10 Universities for Economics – Complete University Guide 2020

- **Cambridge, Imperial, Oxford, St Andrews, Warwick**
- **Durham, Southampton, Birmingham, Leeds** – all very high student satisfaction scores
- **UCL, Glasgow, York, Sheffield** - all with top graduate prospects

Examples of degrees and combined degrees for BHASVIC student's 2019 entry

- Business Computing with Cyber Security
- Game Art
- Artificial Intelligence
- Computer Science & Mathematics with Industrial Experience (4 years)
- Computer Science with Placement
- Computer Science with Industrial Placement
- Computing (International Programme of Study)
- Computer Science with a Year-in-Industry
- Computing Sciences (with a foundation year)
- Computer Science
- Computer Science with Innovation
- Computer Science and Artificial Intelligence (with an industrial placement year)
- Computer Science (Artificial Intelligence) with a Year-in-Industry
- Business Information Systems
- Computing and Information Technology
- Mathematics and Computer Science
- Computer Games (Software Development)
- Cyber Security and Forensic Computing
- Computer Science with Cyber Security

Employability

Most businesses rely on computers to function effectively and there are opportunities within the IT departments of major organisations in many sectors. It's also possible to set up your own business providing IT services such as web design and consultancy. 2/5 of graduates in employment in the UK six months after graduation are working as programmers and software development professionals. Six of the top ten jobs held by graduates are related to computer sciences and include web design and IT operations technician. The UK is very short of programmers and Cyber Security specialists.

What employers like about this subject

Some of the most popular degrees in the country are focused on computer science so there are a lot of options on offer depending on what you want to study. Subject-specific skills you can learn include different programming languages; construction and maintenance of computer hardware and computer modelling and analysis. In a highly digitised world, there are few employers who don't value computing specialists. Last year, some of the industries that employed the most computer scientists - apart from the many branches of the IT industry itself – included electronics, oil and gas, and printing and publishing.

Transferable skills

Teamwork, IT & Technology, Problem solving, Social Skills, Organisation, Numeracy, Communication, Attention to detail, Creative thinking, Analytics, Project Management

Example careers

- Applications developer
- Forensic computer analyst
- Systems analyst
- Computational linguist
- Data scientist
- Network engineer
- Bioanalysis
- Software developer
- Web designer
- IT support technician

Other real-life job examples

- Management consultant
- IT manager
- Graphic designer

Local market information

Working in the Cyber Sector – a look at KPMG

For anyone interested in a career in Cyber, the KPMG website is worth a visit. In addition to their current vacancies in Risk Consulting there are some videos on the diverse projects within the industry and the advancement of women at KPMG. The KPMG apprenticeship programme is also open.

Information systems courses

Businesses, organisations and individuals across a spectrum of sectors and fields rely on complex computer systems to carry out their day-to-day needs and tasks. As these demands become more ambitious, there is a growing need for individuals to interpret these systems, understanding what a business needs and translating these into applicable systems. With a qualification in information systems, you'll gain an in-depth knowledge of how to build such large-scale information systems to prepare you for a career where you can transition across multiple areas.

- BSC
- PRACTICAL PLACEMENTS
- TIME IN LABS
- PROBLEM-BASED LEARNING
- COMPUTER-LITERATE
- HIGHLY-TECHNICAL
- PRACTICAL

Example course modules

- Computer systems
- Business analysis and solution design
- Introduction to information systems
- Programming in Java
- Operating system concepts
- Software engineering
- Information strategy and management
- Core management concepts

Teaching hours / week

The time you'll spend in lectures and seminars each week will vary from university to university, so use this as a guide.

Average all subjects 14 hours → **Average this subject 15 hours** → **Slightly above average**
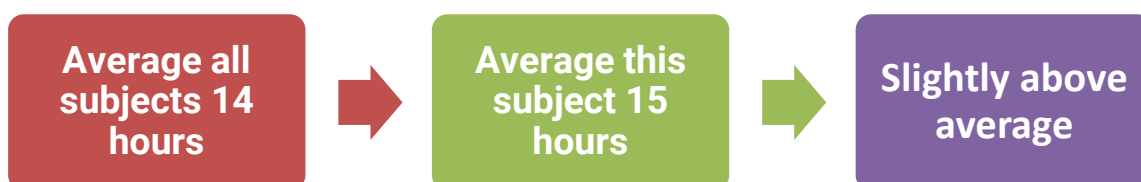
League tables for this subject

[The Guardian](#) [The Complete University Guide](#) [The Times](#)

A-levels (or equivalent) usually required

- No Specific Requirements

Useful to have

- Mathematics

Application checklist

Here's a guide to what to expect from the application process - also check individual university entry requirements, as these may differ.

- January application
- Personal statement

Examples of degrees and combined degrees for BHASVIC student's 2019 entry

- Business Information Systems
- Computing and Information Technology

See also Computer Science

Career prospects

With an expert understanding of information systems, you'll find that you have a large number of graduate opportunities available to you. A large part of information systems is taking huge amounts of data, and creating and managing software and hardware which interacts with this e.g. gathering, storing, filtering and distributing this. So in the era of "Big Data" where information about individuals is being recorded on a grand level, there is a high demand for individuals who can create systems to manage this. That said the field can be competitive. That's why it's important to gain as much additional work experience on top of any you undertake as part of your degree; especially that where you get to interact with individuals in a corporate setting, so you can sharpen your commercial awareness and ability to interpret business needs from those without a technical background, and advise them onwards.

Jobs where this degree is useful

- Information systems manager
- Network administrator
- Systems analyst

Other real-life job examples

- Applications developer
- IT Technical support officer
- IT Sales professional

What employers like about this subject

Contrary to the popular myth about those who work in IT, solid communications skills are advantageous, especially when explaining complex computing ideas to those without any such background. Those who can act as a bridge between different facets of a business will find many opportunities open up to them. Essentially, you'll be problem-solving as you analyse technical solutions and apply them to a business's problems, both highly-desirable skills in the eyes of employers. Additionally, you'll gain many technical skills such as knowledge of various programming languages. Meanwhile those in information systems manager roles will be charged with managing a team of programmers and analysts; these leadership skills are generally valuable as you progress in your career.

Software engineering courses

Software touches so many corners of our daily life. Without it, computers would be useless to us because we need software to deliver instructions to fulfil our practical actions and needs. Software engineering takes the application of engineering and applies it to the creation of software. However software engineering goes beyond simply creation, also dealing with maintenance and management. It's also distinct from programming in that software engineers work as part of a team to develop a solution to a problem.

- VOCATIONAL
- TIME IN LABS
- EXAM-INTENSIVE
- COURSEWORK-INTENSIVE
- COMPUTER-LITERATE
- HIGHLY-TECHNICAL
- BENG
- PROBLEM-SOLVING LEARNING
- PRACTICAL

Example course modules

- Business analysis and solution design
- System environments
- Networking and operating systems
- Database and UML modelling
- Programming and user interface design
- Programming language paradigms
- Information systems
- Computer algorithms and modelling
- Communications systems
- Application and web development

Teaching hours / week

The time you'll spend in lectures and seminars each week will vary from university to university, so use this as a guide.

Average all subjects 14 hours → **Average this subject 15 hours** → **Slightly above average**
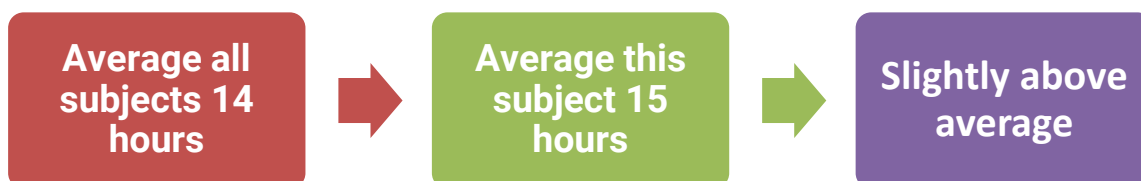
League tables for this subject

[The Guardian](#) [The Complete University Guide](#) [The Times](#)

A-levels (or equivalent) usually required

- Maths

Useful to have

- Computing

Application checklist

Here's a guide to what to expect from the application process - also check individual university entry requirements, as these may differ.

- January application
- Personal statement

Examples of degrees and combined degrees for BHASVIC student's 2019 entry

- Software Engineering for Business

See also Computer Science

Career prospects

Software engineering graduates are equipped to enter the innovative software industry, but can actually find employment in any company which has a hand in computer systems. The role of software engineer is still pretty new; but with the explosion of mobile technology, apps and data-processing systems in all facets of life, the area has witnessed massive growth in a short space of time. Plus more and more objects are being fitted with computer systems which require special software to carry out commands. Popular roles include software architects, software engineers and software developers, but can also stretch to cyber security managers and IT consultants. Employers can range from e-commerce sites and government agencies to tech giants and even the military. While many graduates work in large teams, there are opportunities as independent consultants too.

Transferable skills

Teamwork, IT & Technology, Problem solving, Social Skills, Organisation, Numeracy, Communication, Attention to detail, Creative thinking, Analytics, Project Management

Jobs where this degree is useful

- IT Project manager
- IT Systems analyst
- Site developer

Other real-life job examples

- Software consultant
- Technical consultant
- Project manager

What employers like about this subject

Software engineering graduates possess the in-depth knowledge to work in any organisation which has a hand in computer systems (which is a lot!). This includes a detailed understanding of hardware, software and several programming languages. Because software engineering roles are focused around creating solutions to real-life problems, graduates are expected to have excellent analytical skills, including the ability to respond quickly to problems which arise throughout the design process; to interpret technical plans; and to communicate instructions to the wider team (especially important for those in senior roles). In fact these communication skills go further! You might be forgiven for thinking that the brains behind the software would be sat in a darkened room, putting it altogether – not true! You may be called on to explain to clients how the software works.

Sources & Links

SOURCE: GRADUATE PROSPECTS

SOURCE: WHICH? STUDENT SURVEY

SOURCES: HESA & HEPI-HEA

Computer Science, Computing & IT	• Why choose Computer Science at university. • Computer Science-related courses at university & grades needed. • About degree & higher apprenticeship schemes and which universities offer them. • Apprenticeship schemes & opportunities in summer schools, internships etc.	BHASVLE/Computer Science /Uni & Apprenticeships Twiter - @BHASVIC_Comp

https://targetcareers.co.uk/uni/degree-subject-guides

https://www.whatuni.com/advice/guides/subject-guides/

https://www.thecompleteuniversityguide.co.uk/courses

https://universitycompare.com/guides/subject/

https://www.timeshighereducation.com/student/advice/which-subject-should-you-study-university

https://targetcareers.co.uk/career-sectors