COMPUTER SCIENCE
Canterbury
ACADEMIC EXCELLENCE AND INSPIRATIONAL TEACHING

The School of Computing is an internationally recognised Centre of Excellence for programming education and has won awards for its Java teaching. Within the School are authors of widely used textbooks, two National Teaching Fellows and two Association of Computer Machines (ACM) award-winning scientists.

World-leading research
Our courses are taught by leading researchers – 95% of our Computer Science research is of ‘international quality’, with 65% rated as ‘world-leading’ or ‘internationally excellent’ in the most recent Research Assessment Exercise. You get a chance to study subjects close to the leading edge in areas such as artificial intelligence, computer security, parallel systems, bio-inspired computing and mobile computing.

Teaching excellence
Kent has developed two leading object-oriented teaching environments for the Java programming language – BlueJ and Greenfoot. BlueJ is aimed at university-level learners, has been used in over 1,000 institutions across the world, and has proved very popular with our own students. Greenfoot is aimed at school-level learners and has won an industry award.

Our staff have also written several internationally acclaimed textbooks for learning programming, which have been translated into eight languages and are used worldwide.

The School of Computing has been awarded the status of Centre of Excellence in Object-Oriented Programming and all of our courses also offer professional accreditation by the British Computer Society.

Two of our staff have received the SIGCSE Award for an Outstanding Contribution to Computer Science Education. The award is made by ACM, the world’s largest educational and scientific computing society.

Wide-ranging courses
We offer a wide variety of degree programmes ranging from the more technical Computer Science courses through to joint honours degrees, combining Computing with another subject. It is possible to switch between closely related programmes in the early parts of your course.

Within the degree, there is a wide range of modules. The first language you learn is Java, the standard programming language for many mobile devices and widely used in industry. You can also learn other languages such as C++ and Haskell.
Other areas covered include software engineering, networking technology and human-computer interaction. You learn how to develop software, program mobile devices and discover the underlying protocols on which the internet runs.

**A global outlook**

Kent has a reputation as the UK’s European university and has developed international partnerships with a number of prestigious institutions. We have an international community on campus: our students come from 140 different countries.

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**EMPLOYABILITY**

**A successful future**

The *Guardian University Guide 2013* rates Kent’s School of Computing as among the top five in the UK for job prospects. We ensure our students are equipped with the skills and knowledge that make them highly attractive to potential employers. The high employment levels and well above average starting salaries of our graduates are testament to our success in achieving this.

We focus on courses that provide skills relevant to employers with a good balance between theoretical studies and real-life applications. We also give our students the chance to gain work experience.

As well as providing a first-rate academic experience, we want you to be in a good position to face the demands of a tough economic environment. During your studies, you develop key transferable skills considered essential for a successful career. For more information on the careers help we provide at Kent, please go to p8 or visit www.kent.ac.uk/employability

**Industrial experience**

During your degree, you can gain work experience with leading companies in the UK and overseas as part of a Year in Industry, with support to find industry experience from the School’s placement office. This experience means that after graduation many of our students go on to work for world-class businesses. The School of Computing can also provide commercial experience working as a student consultant within our Kent IT Clinic.
SCHOLARSHIPS ON OFFER

Scholarships at Kent are awarded on academic, sporting and musical merit. For details see www.kent.ac.uk/scholarships/undergraduate
SUPERB STUDENT EXPERIENCE

A scenic, friendly and safe campus, Kent is also one of the best-equipped universities in the country.

Excellent computing facilities
At Canterbury, we have over 1,000 public computers for student use, many available 24 hours a day. All study bedrooms have free connections to the University network and the internet, and include free access to digital TV channels online (a TV licence is required), and access to telephone services for making cheap or free calls over the internet. Free wireless access points are also widely available across campus, enabling you to choose where and when you work.

Course materials for all our modules are web-based and you can access these on campus or from home.

Green and friendly campus
Our campus is set in a superb location on a hill overlooking Canterbury and the Cathedral. Built on 300 acres of parkland, it is surrounded by green open spaces, fields and woods.

Everything you need on campus is within walking distance: the Gulbenkian Theatre and Cinema, a concert hall, the library, the medical centre and pharmacy, the campus shop and bookshop, a bank and cashpoints, bistro, bars, nightclub and launderettes. Our extensive sports facilities include a gym and cardio theatre, climbing wall, squash courts, a 3G artificial football pitch and a sports pavilion.

Kent has a reputation for being a very friendly and supportive university with a diverse mix of people and a cosmopolitan atmosphere – currently, there are 140 different nationalities represented at the University.

Excellent study support
We provide excellent support for you throughout your stay at Kent. This includes access to web-based information systems, podcasts and web forums for students who can benefit from extra help. We use innovative teaching methodologies, including BlueJ and LEGO® Mindstorms for teaching Java programming. The library has over a million books, periodicals and journals, many of which are available online and can be used remotely as well as on campus.

Attractive location
Canterbury city centre is a 20-minute walk or short bus-ride from campus. It is a beautiful city with medieval buildings, lively bars, pubs, restaurants and cafés, and a wide range of shops. The attractive seaside town of Whitstable and beautiful countryside of the North Downs Way is close by. London is under an hour away by train.

DID YOU KNOW?
Kent was ranked 22nd in the UK in The Guardian University Guide 2013.
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How would you describe your lecturers?
They are very knowledgeable. Some of them are taking part in cutting-edge technology, so it’s always interesting talking to them. They are always happy to clarify anything you don’t understand.

Which modules have you enjoyed the most, and why?
I really enjoyed the Java modules because they taught me how to write code. The algorithms module was probably the hardest, but I gained a lot out of it because it taught me how to make efficient programs. The final-year project is probably the module I’m having the most fun with, because I’m working on some cutting-edge technology and I brought back the project from my internship at Cisco in California.

How did you enjoy your Year in Industry?
Silicon Valley is an inspirational place for a computer science student. There is a risk-taking atmosphere, and you feel that with enough enthusiasm you can achieve anything. In the UK, we tend to ask for permission a lot. In the US the attitude is, ‘Don’t ask, just go ahead, we’ll tell you if you’re doing something wrong’. It’s all right to make mistakes, as long as you learn from them. There were four of us from Kent at Cisco and, as well as working hard, we got a chance to explore the US. We visited New York over Christmas and went to Lake Tahoe and Las Vegas. There is so much to do: hiking, skiing, mountain climbing… you could do something new every day if you wanted.

How has this helped towards your degree?
My final year now seems easier than the second year of my course. Before, I would leave everything to the last minute and put off tasks that I didn’t know how to do. In Cisco, when a task is given to you, you do it straight away. I touched technologies I didn’t know existed and learnt so much. If a new task I’ve never tackled before is given to me now, I’m confident that I will be able to work it out.

What has your experience in California taught you?
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A SUCCESSFUL FUTURE

Kent equips you with essential skills to give you a competitive advantage when it comes to getting a job. We are consistently in the top 20 of graduate starting salaries and, in 2011, only 7% of Kent graduates were without a job or a further study opportunity six months after graduation.

Our Computer Science graduates have launched their careers in many different sectors including finance and insurance, technology and IT, commerce, engineering, education, government and health.

Possible careers include:
- software engineering
- applications programming
- mobile applications development
- project management
- systems analysis
- consultancy
- networking
- research and development
- web design and e-commerce
- teaching and lecturing.

What do employers think?
Our high graduate employment rate speaks for itself. Leading companies, such as BAE Systems, Cisco, IBM, Disney, CitiGroup and BT, are keen to employ our graduates.

Many employers who provide placements for our Year in Industry students choose to offer them permanent jobs after graduation. This is a clear indication that employers are impressed with the calibre of our undergraduate students.

Work experience
Employers are very keen to employ graduates who already have work experience. Choosing to spend a Year in Industry can provide you with real commercial experience with leading companies in the UK, including Accenture, BT, Eli Lilly, IBM, Microsoft, Morgan Stanley and Warner Bros, or overseas with our placement partners in California and Hong Kong.

Valuable consultancy skills can also be gained by choosing to work in our Kent IT Clinic. Our consultancy modules allow you to gain academic credits while working on commercial projects with local companies.

Key skills
Studying for a degree is not just about mastering your subject area. These days employers are also looking for a range of key skills, and we encourage you to develop these within your degree programme. The ability to analyse situations, troubleshoot problems, and construct written and verbal presentations are all valuable skills, no matter what your final profession.

Careers advice
The University of Kent’s Careers and Employability Service can give you advice on how to choose your future career, how to apply for jobs, how to write a good CV and how to perform well in interviews and aptitude tests. It also provides up-to-date information on opportunities before and after you graduate. For more details, see www.kent.ac.uk/employability
GRADUATE PROFILE

April Knowler graduated from Kent in 2012 with a First in Computer Science with a Year in Industry. She is on a year’s contract at Pfizer, before starting a job with Accenture, a leading computing and technology company.

Why did you choose to study at Kent?
I was attracted to study at Kent because I liked the Year in Industry support team and the opportunities provided by the Kent IT Clinic. This was the only university that was able to offer experience within the industry and could offer so many credits for it.

What was it that attracted you to the course?
I came to see the University because there was an established Year in Industry programme. Once I had visited the campus I was very impressed by how friendly everyone was and the level-headed approach to the teaching. All the members of staff were keen to talk to us and were very helpful in answering all of my questions.

How would you describe the teaching at Kent?
Fantastic. All of the staff are approachable, interested in their subject, motivated and want to help students as much as they can.

How did the skills you gained at Kent help you in your present career?
The most important skill that I learnt during my time at Kent was how to study and work independently.

How did your career progress after graduation?
I was lucky enough to secure a graduate job with Accenture to start in September 2013. In the meantime, I have accepted a year’s contract at Pfizer, managing the team I worked in during my Year in Industry while I was a trainee.

What are your future plans?
I would like to complete my graduate scheme in the UK and then move abroad to work until I decide to settle down.

What advice would you give to someone thinking of coming to Kent?
Go for it! But I would say make sure that you never stand still. Always have a goal and ensure you are moving in the right direction with it. Your time will fly, no matter where you end up, just make sure you make the most of it.

EXCELLENT PROSPECTS
Kent’s School of Computing is ranked in the top five in the UK for Computer Science graduates’ career prospects in The Guardian University Guide 2013.
CHOOSING YOUR PROGRAMME

All our degrees use Java and equip you with programming, modelling and design skills. A Year in Industry option is available with all the degrees offered by the School of Computing.

To make sure you choose the right degree, we give you the freedom to switch between closely related courses in the early stages of your studies. All the programmes listed in this brochure are based at the Canterbury campus. Other programmes are available at the Medway campus, please see our website for further details www.cs.kent.ac.uk

Computer Science: single honours

Our Computer Science and Web Computing degrees focus on the technical aspects of computing. We offer Computer Science as a 'general' degree and as a 'themed' degree.

• With the general degree in Computer Science you take a broad range of compulsory modules in your first and second years and can select from a variety of options in your final year of study. If you want to keep your options open, then the general form of the degree is for you.

• The themed degree is based on the general degree but has a subject focus and this appears in the degree title. We offer three themed degrees:
  - Artificial Intelligence
  - Consultancy
  - Networks.

You will still have a choice of module options in the final year but the compulsory modules will provide the focus of the subject. Having a themed degree in your CV identifies you as having greater knowledge in a particular area, and this may give you an advantage when you look for work after graduation. If you have a special interest which you would like to pursue, then a themed degree is for you.

Computer Science

This general degree covers the core subjects of program design and implementation using Java, and software engineering, as well as offering a broad range of computer science topics including operating systems, computer architectures, computer security, databases and the web.

Computer Science (Artificial Intelligence)

This degree covers the core elements of Computer Science as well as a broad range of AI techniques, including neural networks and evolutionary algorithms, which draw on philosophy and psychology.

Computer Science (Consultancy)

This degree covers the core elements of Computer Science and offers practical consultancy work as a student consultant in the Kent IT Clinic.

Computer Science (Networks)

This degree covers the core elements of Computer Science and looks at computer systems, communication, security and cryptography.

Web Computing

This covers software engineering and other core computer science topics and also gives you an excellent understanding of web software development, e-commerce and internet security.

Computing: joint honours

Computing joint honours degrees are shared with another subject. The computing element of the degree focuses on the practical uses of computers rather than on the technical aspects. Central to the computing element are programming and information systems.

You can also choose from a range of topics that focus on computer applications, including web publishing and electronic commerce.
Other degree subjects

If you are planning to take your degree in another subject but would like to have Computing as part of your studies, choose a degree ‘with Computing’. A quarter of your time will be spent studying Computing.

Options include:
• Economics with Computing
• Social Policy with Computing.

Kent International Foundation Programme

If you are applying from outside the UK without the necessary English language qualifications, you may be able to take the Kent International Foundation Programme (IFP). Passing the Kent IFP at the standard required by the academic school administering your main degree programme guarantees you entry on to the first year of the degree programme listed above. For more details, see www.kent.ac.uk/international-pathways/ifp/

Computing and Business Administration

Your time is divided between a business-oriented, practical approach to Computing and the study of Business Administration. For more details, see Kent’s leaflet on Business Administration.

Other Computing degrees

Computing joint honours with ‘and’ in the title means your time is divided equally between computing and your joint subject. Joint honours options include the following:

Computing and...
• Business Administration
• Business Administration with a Year Abroad
• Classical & Archaeological Studies
• English and American Literature
• European Studies
• Film
• French
• German
• Hispanic Studies
• History
• Italian
• Philosophy

“Kent has quite a reputation for the strength of its School of Computing, which was enough reason to place it on my shortlist. After visiting for an Open Day and seeing the facilities and atmosphere around the place, I was convinced. Kent was the right university for me.”

Simon Todd
BSc (Hons) Computer Science
STUDYING AT STAGE 1

Your first year of study is Stage 1. At this level, you learn how to program in an object-oriented language; no previous programming experience is required.

Each stage comprises eight modules, four in each teaching term. Each module has two lectures and one to two hours of classes, making 14 formal contact hours per week and eight hours of ‘homework club’ drop-in sessions each term.

The marks from Stage 1 do not go towards your final degree grade, but you must pass to continue to Stage 2. If you choose to do the Year in Industry, your marks from Stage 1 will be used by employers to assess your suitability for a placement.

For joint honours programmes, including Computing and Business Administration, half of your credits are taken in Computing; the others are in your joint subject. Typical Stage 1 modules are listed below. Please note, modules are subject to change.

Modules for Computer Science degrees
- Computer Systems
- Databases and the Web
- Foundations of Computing I
- Foundations of Computing II
- Further Object-Oriented Programming
- Human Computer Interaction
- Introduction to Object-Oriented Programming
- People and Computing

Web Computing
- Computer Systems
- Databases and the Web
- Digital Visual Narrative
- Foundations of Computing I
- Further Object-Oriented Programming
- Introduction to Object-Oriented Programming
- People and Computing
- Website Design

Modules for Computing (joint honours) degrees
- Computer Systems
- Databases and the Web
- Further Object-Oriented Programming
- Human Computer Interaction
- Introduction to Object-Oriented Programming
- Credits are also taken in your joint subject area

Computing and Business Administration
- Databases and the Web
- Financial Accounting, Reporting and Analysis
- Further Object-Oriented Programming
- Introduction to Object-Oriented Programming
- Introduction to Marketing
- Managers and Organisations
- People and Computing

Optional modules:
- Computing for Business and Accounting
- Microeconomics for Business
- Global Business Environment.

CONTINUED OVERLEAF
STUDYING AT STAGE 1 (CONT)

Modules: Stage 1
Modules are listed in alphabetical order. See p13 for list of modules taken on each programme.

Computing for Business and Accounting
This module covers the theoretical knowledge and practical computing skills you need to make full use of computers and information technology across other modules. It does not assume any previous knowledge of computers. Topics covered include operating systems, computer networking, spreadsheets, wordprocessing, databases and the use of electronic mail. The principles of designing spreadsheet applications are covered in detail.

Computer Systems
Computer systems are the fundamental components and behaviours (hardware and software) of a typical computer system. This module explores the fundamentals of how computer systems collaborate to manage resources and provide services. It also introduces you to computer architecture and operating systems, and looks at the important topic of communications.

Databases and the Web
The module introduces a range of tools and techniques for creating both static and dynamic web pages. It covers creating static content using HTML5, controlling the appearance of pages using CSS and the use of Javascript to improve interactivity. You are introduced to databases and SQL as a means of storing and manipulating dynamic content, and the use of PHP to integrate static and dynamic content.

Digital Visual Narrative
This concentrates on two vital stages of the creative use of motion graphics in multimedia. Firstly, the traditional skills of taking a theme or idea and thinking around it, researching it, developing an insight concerning it and developing a narrative to embody this and illustrate it. Secondly, the modern skills of planning and creating a meaningful time-based visual narrative with current multimedia applications.

Financial Accounting, Reporting and Analysis
This module gives you an understanding of the relationship between business and accounting and covers the principles underlying a double-entry accounting system; how to prepare primary financial statements from trial balance; the regulatory framework of financial reporting; the annual report and accounts of plcs; and the analysis and interpretation of financial statements.

Foundations of Computing I and II
Construction of computer programs often requires some understanding of mathematics – either directly (for example, in graphics programming) or indirectly (for example, to prove the correctness of programs).
These two modules teach the mathematical foundations of computer science, using examples that relate directly to the field of computing.

**Further Object-Oriented Programming**
A continued look at the areas covered in Introduction to Object-Oriented Programming (see right).

**Global Business Environment**
You analyse specific real-world examples of multinational enterprises and international organisations such as the World Trade Organisation, International Monetary Fund, and the World Bank. You use analytical tools and frameworks to help you understand the complexity and diversity of doing business internationally.

**Human Computer Interaction**
The design of interfaces of computing devices has always been important, and often sadly neglected, leading to systems that are annoying, hard to use and error prone. The advent of more diverse devices, such as phones and other touch devices, embedded systems and various gadgets has made this topic even more relevant. Modern devices have shown that interface design can make a huge difference in user satisfaction, usability, economic success and fun of using a given system. In this module you discuss details of designing and testing interfaces – you will never look at the world around you in the same way again.

**Introduction to Marketing**
This module demonstrates the importance of marketing in competitive and dynamic environments. The centrality of the consumer provides the focus for the module, with the needs of the firm shown in balance with consumers’ needs and wants. Key topics include: the marketing concept; the marketing environment; market segmentation and targeting; brand development and management; management of the marketing mix; new product development; and an overview of internationalisation.

**Microeconomics for Business**
You are introduced to economics and its role in analysing business decisions, strategic behaviour and issues. The module covers business organisations, supply and demand, operation of markets, business in a market environment and alternative theories of the firm.

**People and Computing**
Professionalism in the computing industry is the focus of this module. It presents the formal legal constraints on IT (data protection) while giving you an appreciation of the broader history of the field – each student is required to present a poster on a person/topic from computing history. You also develop an appreciation for estimation (such as the broadband speed required to deliver HD-TV) and make a video on a topic in this area. Assessments include presenting a case study on an ethical aspect of computing practice.

**Website Design**
The design, development and publication of websites is the subject of this module. You learn how to integrate text and graphics in creating a web page using the latest HTML5 and CSS3 technologies. Website creation is enhanced by developing skills in JavaScript programming. No previous web design experience is required.
STUDYING AT STAGE 2

Your second year of study is known as Stage 2. Subjects covered here often build on Stage 1 modules and cover topics at a deeper level.

Most Stage 2 modules are assessed by coursework and end-of-year examination. Marks from Stage 2 count towards your degree result.

If you are taking a joint honours programme, half of your credits are taken in Computing; the others in your joint subject.

A list of typical Stage 2 modules follows. Please note that the exact modules are subject to change.

Compulsory modules
Each degree has specific modules that students on that programme take. These are as follows:

Computing and Business Administration
• Accounting for Management Control and Decision Making
• Computer Systems
• Database Systems
• Managing HR in Contemporary Organisations
• Marketing Strategy
• Software Engineering
• Strategy Analysis and Tool

Computer Science
• Algorithms, Correctness and Efficiency
• Database Systems

Web Computing
• Algorithms, Correctness and Efficiency
• Database Systems
• E-Commerce Technology
• Interaction Design
• Operating Systems and Architecture
• Software Engineering

Computer Science (Artificial Intelligence)
• Algorithms, Correctness and Efficiency
• Database Systems
• Functional and Concurrent Programming
• Introduction to Intelligent Systems
• Software Engineering
• Theory of Computing
• Web Development

Computer Science (Consultancy)
• Algorithms, Correctness and Efficiency
• Database Systems
• Introduction to Marketing
• Operating Systems and Architecture
• Software Engineering
• Theory of Computing
• Web Development

Computer Science (Networks)
• Algorithms, Correctness and Efficiency
• Database Systems
• Functional and Concurrent Programming
• Operating Systems and Architecture
• Software Engineering
• Theory of Computing
• Web Development

Other Computing joint honours degrees
The compulsory modules are:
• Introduction to Object-Oriented Programming (if not taken at Stage 1)
• Further Object-Oriented Programming (if not taken at Stage 1)
• Software Engineering (if module CO520 was taken at Stage 1).

Optional modules:
• Algorithms Correctness and Efficiency
• Database Systems
• E-Commerce Technology
• Operating Systems and Architecture
• Web Development.

You also take required modules in your other subject area.
Modules taught by the School of Computing

Algorithms, Correctness and Efficiency
This module builds on the Stage 1 programming modules and gives you the ability to design and use linked data structures, analyse the efficiency of algorithms, gain an understanding of known algorithms and have a general appreciation of numerical calculation and approximate reasoning.

Computer Systems
See p14 for details.

Database Systems
You look at the design, implementation and use of database systems. Topics include: database management systems architecture; data modelling and database design.

Functional and Concurrent Programming
This introduces you to fundamental concepts of functional and concurrent programming, using the Erlang language as a vehicle to put these concepts into practice. The first part of the module covers basic ideas in functional programming. The later part of the module covers more advanced topics and consideration is given to the relevance and applicability of functional and concurrent programming for use in real applications.

Further Object-Oriented Programming
See p15 for details.

Introduction to Intelligent Systems
You look at the motivation for designing intelligent machines, as well as the philosophical issues. Topics include number methods for knowledge representation and machine learning. You look at biologically-inspired algorithms, swarm-based methods and artificial immune systems.

Introduction to Object-Oriented Programming
See p15 for details.

Operating Systems and Architecture
The principles of computer operating systems and the architectures for which they are designed are covered in this module. You discover how these systems can affect layered software systems and look at the hardware implications of high-level programming language support.

Software Engineering
This module runs from the autumn term, when theoretical aspects of software engineering are introduced and into the spring term when you use your knowledge to work on a group-based software engineering project. This is a prerequisite to work in the Kent IT Clinic (see p19).
STUDYING AT STAGE 2 (CONT)

Theory of Computing
You look at theoretical computing, building on the logic covered in Foundations of Computing modules at Stage 1. The topics covered include logic, model checking, complexity and decidability, grammars and finite automata.

Web Development
This builds on the Stage 1 Databases and the Web module. The module includes Ajax, javascript and PHP, web services and web applications, web servers, payment systems, analytics and traffic analysis. By the end of the module you should be able to create a web application.

Modules taught by the School of Engineering and Digital Arts
Interaction Design
This is concerned with how user interfaces with high usability are designed. In particular, you learn how to apply a user-centred design process to your design activities.

E-commerce Technology
You study advanced topics related to the internet and electronic commerce, and the technology needed to build dynamic websites and undertake a project aimed at developing an e-commerce site. You learn techniques used in computer security and encryption.

Modules taught by Kent Business School
Accounting for Management Control and Decision Making
This module introduces you to the role of the accountant in the management information system as well as to accounting techniques and methods which play a role in the organisational decision-making process and control of the business.

Introduction to Marketing
See p15, for details.

Managing HR in Contemporary Organisations
This module introduces you to the key concepts of managing people, including an examination of organisational, human resource management and industrial relations theory. This is achieved through relating relevant theory to practical people and organisational management issues.

Marketing Strategy
Integrating theory and practice, you use real market data to lead decisions in marketing strategy. You are expected to be able to identify markets where continuous innovation is possible with the introduction of products with distinctive consumer benefits.

Strategy, Analysis and Tools
You learn how to identify strategic issues and develop strategic options to address them, developing an appreciation of the complexity of strategic decision-making. This also enhances your ability to read business articles from a strategic perspective and to present strategic arguments.
KENT IT CLINIC

All our degree programmes give you the opportunity to gain work experience as a student consultant with our Kent IT Clinic, usually at Stage 3.

What is the Kent IT Clinic?
The Kent IT Clinic is a not-for-profit organisation operated by the University of Kent, providing a project-based consultancy service to small businesses in Kent. It uses current students to provide the consultancy work under the guidance of dedicated professional IT staff employed by the University.

Student consultants gain academic credit for the work they do, which counts towards their degree. In its first five years, more than 50 of our undergraduates have worked in the Clinic as student consultants and over 30 consultancy projects have been successfully completed.

How can the Kent IT Clinic help me?
Working for the Clinic can significantly improve your employment prospects. It gives you real work experience, which is invaluable to future employers. Also, when applying for jobs, it gives you the edge over other graduates who have not had this opportunity.

You can try out different aspects of IT consultancy work while still a student and find out what you like to do best, helping you to plan your career.

How do I become a student consultant in the Clinic?
You do not need any previous experience as a consultant but you do need to have successfully completed the relevant stages of a Computer Science-based degree or a Computing joint honours degree. You also need to demonstrate a keen interest in IT and have an aptitude for consultancy work. You are required to go through an interview before you can start work in the Clinic.

You take an introductory module to familiarise yourself with the consultancy environment. You can then choose further modules that involve doing real consultancy assignments for the Clinic.

As a student consultant, you work at the University and take the consultancy modules as part of your degree. It is different from the Year in Industry, where you spend an additional year away from the University on placement.

What help is provided?
The Clinic is primarily run by the students. Students get additional help by dedicated, professional staff with a detailed knowledge of the consultancy business. They help and support you through all stages of the process, supporting both your relationship with the customer and the consultancy work you do, and advising you on your final project report.

You are also assigned an academic supervisor to help with the academic aspects of the Kent IT Clinic experience.
YEAR IN INDUSTRY

Well over half of our students choose to do a Year in Industry, between Stages 2 and 3.

Career and study benefits
Employers are very keen to employ graduates who already have work experience. The Year in Industry can greatly enhance your job prospects by providing you with real commercial experience. It also allows you to evaluate a career path, and gain knowledge of the working environment. If your placement is a success, you may even be offered a job with the same employer after graduation.

The practical experience also improves your skills in many areas. This means it will be useful during your final year of study, helping you to gain a better degree.

Finding a placement
Our students have been on placements with leading companies in the UK, such as BT, Eli Lilly, IBM, Intel, Microsoft, Morgan Stanley and Thomson Reuters. Some of our students go overseas to our placement partners in Amsterdam, the USA and Hong Kong. There are frequent visits to the University by companies who present placement opportunities and interview candidates.

The School has a Placement Office, with a team dedicated to helping you to secure the right placement. They also give advice on placements that are likely to enhance your career prospects, how to write a winning CV and hone your interview skills, and maintain close contact with you during your year away to give you support during your placement.

Salary and benefits
Students usually work for an entire calendar year. Salary and holiday entitlements vary according the employer you work for. Many students find that they earn enough to be able to save some of their income, and this helps them in their final year of study.

Assessment
Your placement is assessed by employer feedback and academic evaluation. It contributes 10% to the overall degree mark.

“I spent my placement year in Hong Kong working for HSBC. I really enjoyed my time there. I was part of a development and support team, and it was awesome to be able to use my knowledge to solve real-life-problems. I worked with teams in Hong Kong, China and France.”

Alex Alferovs
BSc (Hons) Computer Science with a Year in Industry
STUDYING AT STAGE 3

Stage 3 is the final year of study and you are able to choose from a wide range of optional modules, allowing you to specialise in an area of your choosing.

Everyone takes a project module on a topic of their choice. This may be a group project, an individual research project or an IT consultancy project.

Most Stage 3 modules are assessed by a combination of coursework and end-of-year examination. The project is assessed by your individual contribution to the final project, the final report, an oral presentation and a viva examination. Your project counts for at least 25% of the year's marks. Marks from Stage 3 count towards your degree result.

A list of typical Stage 3 modules in each programme is as follows. Please note: the exact modules available are subject to change.

**Modules for all degrees**
- Project

**Compulsory modules**

- Computing and Business Administration
  - Operations and Services Management

**Optional modules**

All programmes include optional computing modules. Other options depend upon your degree.

Optional modules include, but are not limited to:
- Advanced Programming Techniques
- Business-to-Business Marketing
- Cognitive Neural Networks
- Computer Graphics and Animation
- Computer Networks and Communications
- Computer Security and Cryptography
- Computing in the Classroom
- Computing Law and Professional Responsibility
- Concurrency Design and Practice
- Corporate and Business Strategy
- Data Mining and Knowledge Discovery
- Electronic Commerce
- Embedded Computer Systems
- Image Analysis and Applications
- International Business
- IT Consultancy Practice
- Mobile and Ubiquitous Computing
- Natural Computation
- New Enterprise Start-up
- Services Management
- Strategic HR Management
- Philosophy of Cognitive Science and Artificial Intelligence.

Further options in business or philosophy are available for students following a themed degree in these areas.

CONTINUED OVERLEAF
STUDYING AT STAGE 3 (CONT)

**Modules taught by the School of Computing**

**Project**
You apply the skills acquired in other modules to complete a project. This gives you the chance to explore an area of interest and produce a large piece of work. Prospective employers often ask about projects in interviews and this module helps you to develop professional work practices.

**Advanced Programming Techniques**
This module takes a deeper look at advanced techniques in both low and high-level programming languages. Topics include: Introduction to Unix; low-level architecture; memory layout; pointers; C programming and debugging; pre-processing, compiling, linking and loading, including the use of dynamically linked libraries.

**Computer Graphics and Animation**
This module examines the concepts of computer graphics and animation. You become familiar with technologies, techniques and algorithms for the acquisition, generation, manipulation, presentation, storage and communication of various kinds of graphical data. You then apply this through the development of computer graphics software.

**Computer Networks and Communications**
This module starts with current computer network and communication technologies. You learn how the hardware and software components are organised and how they actually work (as opposed to how they are used, which is covered in an earlier module). Key topics are then chosen to reveal the nature of state-of-the-art technology and issues that have yet to be solved.

**Computer Security and Cryptography**
Here you learn about techniques including computer operating systems, distributed applications (such as e-commerce) and embedded systems (from smart cards and pay-TV to large industrial plant and telecommunication systems).

**Computing in the Classroom**
This module runs under the Undergraduate Ambassadors' Scheme. You promote computing in a local school, where you begin by observing the class teacher, and progress to small group/whole class teaching. You devise and run a special computing project with the pupils.

**Cognitive Neural Networks**
You learn about neural networks, the mathematical equations that they are based on and look at some examples of computation applied to neurobiology and cognitive psychology. This knowledge is put into practice by building neural networks using state-of-the-art simulation technology and using them in the solution of problems.
Electronic Commerce

Electronic commerce is an increasingly important area for consumers, businesses and national economies. This module looks at its economic and social implications, its drivers and limitations. You learn about the principal features of e-commerce and compare them with traditional forms of trading. You have the chance to implement an end-to-end e-commerce system.

IT Consultancy Practice

Students taking this module undertake one or (typically) more assignments for the Kent IT Clinic (KITC). Each assignment will be one of three types: work on one of KITC’s contracts with an external client (to the extent that client-funded work allows, every student will be given at least one assignment of this type); a contribution to the infrastructure of KITC itself; formulating a costed proposal for the future development of KITC. In suitable cases, and to the extent that numbers allow, you may also be asked to undertake supervisory or mentoring duties. Training will be provided.

Mobile and Ubiquitous Computing

In this module, you look at the hardware devices, communication and software infrastructures, and environments used in small devices such as mobile phones, as well as in ubiquitous computing contexts. Topics include current practice and professional and ethical issues, particularly those relating to security and privacy.

Natural Computation

You examine developments in biological-inspired computation and other areas such as quantum computing. There is also a practical element to the module; you gain knowledge of a widely-used computing paradigm – genetic algorithms (GA). Topics covered include evolutionary computation, swarm intelligence and artificial immune systems.

Computing Law and Professional Responsibility

This module examines professional issues within organisations and includes topics on data privacy legislation, criminal law relating to networked computer use, and intellectual property rights, including copyright, patent and contract law. Specific topics change from year to year, as both computer law and professional responsibilities continue to evolve.

Concurrency Design and Practice

You study advanced concepts of dynamic parallel programming, based on the CSP model and using Kent’s KRoC occam compiler and JCSP Network Edition. Topics include: mobile data, channel-ends and processes; shared channels; extended process synchronisation; priorities; and dynamic network restructuring. You also look at rules for building deadlock-free systems that are free from livelock and starvation.

Data Mining and Knowledge Discovery

What are the strengths and weaknesses of various data mining and knowledge discovery techniques? How do you choose the most appropriate for any particular task? This module gives you the chance to use a state-of-the-art data-mining tool. You evaluate the quality of the discovered knowledge and can extend data mining concepts and principles to text and web mining.

Modules taught by the School of Engineering and Digital Arts

Embedded Computer Systems

This module examines the control and organisational centre of an electronic or mechanical system, and looks at issues related to time critical systems. It also provides exposure to practical embedded systems design through substantial practical work.

Business-to-Business Marketing

This module focuses on marketing to businesses and/or organisations in contrast to individual consumers. You gain an understanding about the distinctiveness of business markets as compared to consumer markets and acquire the ability to analyse and respond to managerial problems in managing business markets.
STUDYING AT STAGE 3 (CONT)

Corporate and Business Strategy
This module extends your knowledge and understanding of strategic management and strategic issues. It introduces a range of contemporary issues associated with the formulation and implementation of corporate and business strategies. The module will use a project in which you identify and suggest possible strategic solutions to a strategic issue in a real organisation to develop your ability to link theory and practice in real-life situations.

International Business
The module gives you an understanding of the complex environment in which international business takes place and the ways that companies deal with these challenges. The first part examines the political, economic and cultural environments that affect business. The second part is dedicated to analysing the ways in which international business performs main functions such as human resource management, marketing and finance in an international context.

New Enterprise Start-up
The module examines the characteristics required of a business to succeed and the reasons for business failure, risks and uncertainties, skills requirements for business ownership and sources of advice and support for businesses.

It looks at the new business planning process, developing and evaluating the business idea and producing a business plan for potential lenders and investors. It covers the financial aspects, market research and planning, quality standards, legal issues, staff and physical resources, and the overall planning and implementation of the business plan.

Services Management
This deals with the management of service operations: that part of any organisation that produces and delivers services required by customers of the organisation. The module provides a clearly structured qualitative treatment of service management that explores the design of service delivery systems and how customer service quality can be managed.

Strategic HR Management
This module introduces you to the strategic management of people, linking the management of human resources to the achievement of the strategic aims of the organisation. This is achieved through relating relevant theory applied to practical people and organisational management issues.

Modules taught by the School of European Culture and Languages

Philosophy of Cognitive Science and Artificial Intelligence
The cognitive sciences are united in their attempt to discover the nature of cognition: what is it to be intelligent, to have the capacity for rational thought, to have the ability to form concepts?

An underlying assumption of classical approaches to the cognitive sciences is the idea that intelligent creatures have 'mental representations' and that they manipulate these representations by rule-governed processes.

This is challenged by non-classical approaches. In the course of the module, you consider the vexed question whether machines process representations and whether they can be construed as intelligent.

DID YOU KNOW?
Kent was ranked 3rd in the UK for overall student satisfaction in the National Student Survey 2012.

25 www.cs.kent.ac.uk
Why not come along for an Open Day or a UCAS Visit Day and see for yourself what we have to offer?

Open Days
Open Days are held in the summer and the autumn for potential students, and their families and friends, to have a look round the campus. The day includes a wide range of subject displays, demonstrations and informal lectures and seminars, and the chance to tour the campus with current students to view accommodation and facilities. For more information, see www.kent.ac.uk/opendays

UCAS Visit Days
UCAS Visit Days take place between December and April and include a tour of the campus with student guides, lunch in one of the colleges, an opportunity to ask questions of a panel of Computing staff and students, and a talk about university life. You also have the chance to talk to one of the academics and discuss any queries about the course. For more details, see www.kent.ac.uk/visitdays

Informal visits
You are welcome to visit the campus at any time. We produce a leaflet that can take you on a self-guided tour and you may be able to meet an academic member of staff, although we cannot always guarantee this. For more details, see www.kent.ac.uk/informal

Scholarships and bursaries
For details of scholarships and bursaries at Kent, see www.kent.ac.uk/ugfunding

More information
For more information about the University, or to order another subject leaflet, please contact the Information and Guidance Unit.

Tel: 01227 827272
Freephone (UK only): 0800 975 3777
Email: information@kent.ac.uk

You can also write to us at: Information and Guidance Unit, The Registry, University of Kent, Canterbury, Kent CT2 7NZ.

For the latest departmental information, please see www.cs.kent.ac.uk

Terms and conditions: The University reserves the right to make variations to the content and delivery of courses and other services, or to discontinue courses and other services, if such action is reasonably considered to be necessary. If the University discontinues any course it will endeavour to provide a suitable alternative. To register for a programme of study, all students must agree to abide by the University Regulations (available online at: www.kent.ac.uk/regulations/).

Data protection: for administrative, academic and health and safety reasons, the University needs to process information about its students. Full registration as a student of the University is subject to your consent to process such information.
Location
Canterbury.

Award
BA (Hons), BSc (Hons).

Degree programme

Single honours
• Computer Science (G400)
• Computer Science with a Year in Industry (G404)
• Computer Science (Artificial Intelligence) (G4G7)
• Computer Science (Artificial Intelligence) with a Year in Industry (G4GR)
• Computer Science (Consultancy) (G403)
• Computer Science (Consultancy) with a Year in Industry (G406)
• Computer Science (Networks) (G421)
• Computer Science (Networks) with a Year in Industry (G420)
• Web Computing (G450)
• Web Computing with a Year in Industry (G451)

Joint honours
Computing and...
• Business Administration (GNL2)
• Business Administration with a Year in Industry (GNK2)
• English & American Literature (QG34)
• Film (WG64)
• French (RG14)
• German (RG24)
• Hispanic Studies (GR44)
• History (VG14)
• Italian (RG34)
• Philosophy (VG54)

Degrees ‘with’ Computing
You spend less than half of your time studying Computing.
• Economics (L1G4)
• Social Policy (L4G4)

Typical offer levels

Computer Science and Computing degrees at Canterbury
ABB, plus GCSE Mathematics grade C. IB 34/16 Mathematics 5 at HL or SL, or Mathematics Studies 6 at SL.
BTEC National Diploma: Distinction, Distinction, Merit overall.

Required subjects
GCSE Mathematics grade C.

Year abroad
If you are studying a modern language, you will spend a year abroad as part of your course.

Year in Industry
Available on all programmes (see left).

Professional recognition
G400, G404, G4G7, G4GR: These have full Chartered IT Professional (CIITP) accreditation from the British Computer Society (BCS).
GNL2, GNK2: These have partial BCS CIITP accreditation.
G403, G406, G421, G420: Full accreditation has been applied for.

Foundation programme
International students can take a foundation programme at Kent in order to gain the necessary entry requirements.
See www.kent.ac.uk/courses/foundation/

For the latest course information, including entry requirements, see: www.kent.ac.uk/ug
COME AND VISIT US

We hold Open Days at our Canterbury and Medway campuses.
For more information, see:
www.kent.ac.uk/opendays