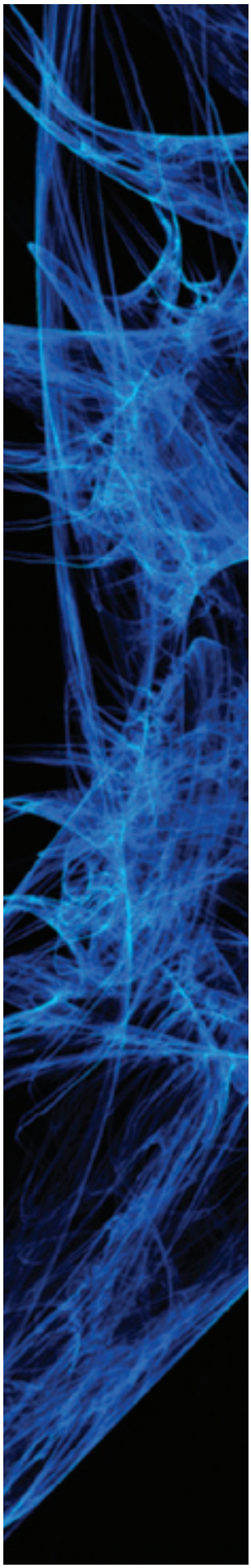
Cognitive science



Essentials

At Sussex, you take cognitive science alongside another subject as part of a joint degree or as a minor

What cognitive science joint degree is there?
Philosophy and Cognitive Science (p106)

What degrees can I take with cognitive science as a minor?
Neuroscience with Cognitive Science (p104)
Psychology with Cognitive Science (p117)

See also
Computer Science and Artificial Intelligence (p50)

What A levels/IB scores do I need?
Refer to relevant subject entry for details

Fees
Refer to pages 137-138 for information on fees

English language requirements
IELTS 6.5 overall and not less than 6.0 in both the Listening and Writing sections. Internet-based TOEFL with 90 overall, including at least 24 in Speaking and 25 in Writing. For alternative English language requirements, refer to page 130

How do I find out more?
For more information, contact:
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www.sussex.ac.uk/cogs

When can I visit?
Our Open Day dates for 2011 are 11 June and 8 October. We also run regular campus tours. Please book online at **www.sussex.ac.uk/visitors** or call 01273 876787

All applicants offered a place are invited to an admissions day during the autumn or spring terms. These give an insight into our degrees and what it's like to study here, through talks, tours, demonstrations and course sampler sessions

Your cognitive science degree will give you a range of intellectual, practical and transferable skills

Why cognitive science?
How does the mind work? What is the relation between mind and body? How can consciousness exist in a physical world? These questions have been posed for millennia, but only now are we in a position to begin answering them scientifically. Consolidating recent scientific and philosophical breakthroughs, and placing the notion of computation centre-stage, cognitive science offers the best explanations to date of all aspects of the mind: thinking, memory, creativity, imagination, free will, perception, action, language, and more. It is informed by, and also informs, advances in artificial intelligence (AI). The study of cognitive science offers substantial knowledge of our current scientific understanding of mind, and elicits a profound respect for those aspects that we have yet to explain. Not only will you acquire skills and knowledge valued in the workplace, you will participate in humanity's most ambitious intellectual enterprise: to understand ourselves.

Why cognitive science at Sussex?

- Sussex is a world-famous pioneer in teaching and research in cognitive science.
- Sussex is one of the few universities in Britain to offer an undergraduate programme in cognitive science.
- The tutors who design and run the cognitive science programme are members of the Centre for Research in Cognitive Science (COGS), which means that your tutors are internationally recognised experts in, and have a passion for, the material they teach.
- The programme emphasises interdisciplinarity, with options available in computing/artificial intelligence, neuroscience, philosophy, psychology and other relevant fields.

What sort of career could I have?
Our graduates have gone on to a wide range of possible career paths, including:

- AI-based IT
- the stock market
- management consulting
- journalism or publishing
- language teaching
- human factors research
- games software or web development
- postgraduate study, including teaching and research positions in higher education.

Our graduates have been employed by:

- BT
- LogicaCMG
- Motorola
- PricewaterhouseCoopers
- Reuters.

Core courses

Students studying cognitive science as part of a joint degree (ie when cognitive science occupies 50 per cent of the overall degree programme) take two cognitive science core courses per term. If you take cognitive science as a minor (ie when it occupies 25 per cent of your programme), you take one cognitive science course per term

Courses currently include:

Year 1

You take Ghost in the Machine, which introduces you to the fundamental ideas and disciplines of cognitive science. In Cognitive Modelling, you learn how models of human cognition can be used to understand how people relate to the world around them. You also choose from such options as Cognition in Clinical Contexts • Cognitive Psychology I • Contemporary Issues in Psychology • Human Systems • Introduction to Programming • Neuroscience and Behaviour • Philosophy of Science • Psychobiology

Year 2

You choose how you want to build on the fundamentals acquired in Year 1, taking options from a list that currently includes: Abnormal and Clinical Psychology • Applied Cognitive Psychology • Brain and Behaviour • Cognitive Psychology II • Developmental Psychology • Independent Study in Psychology • Neural Circuits • Philosophical Foundations of Cognitive Science • Philosophy and Science of Consciousness • Principles of Neuroscience • Seminars in Neuroscience

Year 3

In the final year you choose options addressing more specialised topics in depth, from a list that currently includes: Cognitive Neuropsychology • Computational Models of Creativity • Conscious and Unconscious Mental Processes • Current Issues in Cognitive Science • Developmental Neurobiology • Human-Computer Interaction • Intelligence in Animals and Machines • Neurobiological Mechanisms of Learning and Memory • Psychobiology of Cognitive Ageing and Dementia • Psychobiology of Motivation and Emotion • Psychology of Art • Reading Faces • Receptors and Sensors • Sensory and Motor Functions of the Nervous System • Social Cognitive Development • The Neuropsychology of Communication • Topics in the Philosophy of Cognitive Science

Cognitive science offers the best explanations to date on all aspects of the mind, and also informs advances in AI

How will I learn?
You attend lectures and seminars, complete take-away problem sets, and undertake guided independent reading and research. Your learning involves other activities, such as writing computer programs, participating in email discussion groups, or designing psychology experiments, depending on the options you choose. Feedback on your assignments will be an integral part of the learning process.

Assessment takes the form of essays and, depending on your options, may also include a learning diary, computer-based practical work, unseen examinations and extended essay writing.

What will I achieve?

- an understanding of: the computational approach to understanding the mind; the principles and methods of artificial intelligence, linguistics, neuroscience, philosophy and psychology; and current and historical approaches to the notion of mind and how to critically evaluate them
- intellectual, practical and transferable skills such as: applying scientific findings about cognition to real-world problems; comparing and evaluating competing theories; constructing and using models, particularly computational ones, as a means of explanation; and producing (and evaluating) rigorous, factual arguments. You will also develop independent essay- and project-writing, oral presentation and valuable time-management skills, as well as strategies for managing your own learning.

Cognitive Science

In Year 1, you explore how different disciplines employ different concepts, techniques and methods to tackle the same fundamental questions about perception, reasoning, consciousness and language. You learn how to build computational models of cognitive abilities in order to explain mind and behaviour. Depending on your interests, you may also choose to learn about the essentials of the brain, principles of psychology, or the philosophical issues underlying the sciences of the mind.

In Year 2, you can decide to delve deeper into cognitive or abnormal psychology, how a child's mind develops, the connections between cognition and language, how the brain works, applying cognitive science to the real world, or the philosophical issues that arise in trying to understand thinking and consciousness.

The third year allows you either to further deepen the interests and knowledge you acquired in Year 2, or to broaden your learning experience by moving on to other topics. Options are offered from the fields of artificial intelligence, philosophy, psychology, and neuroscience (refer to the list of core courses on the left).