ST EDMUND HALL VISITING STUDENT PROGRAMME
PSYCHOLOGY

Psychology at Oxford achieved outstanding results in the UK 2014 Research Excellence Framework (REF) assessment. Psychology was grouped with Psychiatry and Neuroscience for the REF assessment. Oxford University was rated highest in the UK in this subject grouping. Overall research profiles, research outputs, impact and environment were outstanding.

The Quality Assurance Agency (QAA) for Higher Education awarded a maximum score of 24 for teaching and learning quality in their most recent review of Psychology at Oxford University.

Number of places: 10 places.

The following options in psychology are offered in the Visiting Student programme. Students would normally receive eight tutorials in an option for a major credit, and four tutorials in an option for a minor credit. It is possible to take both your major and minor in Psychology or to combine a major or a minor in Psychology with another subject.

Introduction to Psychology

The aim of this course is to introduce you to some of the basic problems, theories and discoveries of Psychology. The course is divided into four consecutive sections. A different lecturer covers each of these sections in a series of seven lectures. All the lecturers take care to point out the connections between their own lectures and those of the other three sections.

The course begins in the first term with Developmental Psychology, and the seven lectures on this tropic will cover various ways in which children's behaviour changes as they grow older. This part of the course deals with the origins of our perception, with the beginnings of language and with other aspects of children's intellectual and social lives. The next part of the course is on Sensory Processes and Perception, and mainly concerns vision. The lectures cover the physiological basis of vision, the perception of colour and how we use perceptual information as we move around our environment.

The Hilary term lectures begin with lectures on Psychobiology. These are on the organisation of the brain, and how this affects emotion, motivation, language and thought. The lectures conclude with a discussion of chemical communication in the brain and how this relates to the action of various drugs on our behaviour. The last set of lectures is on Cognitive Psychology. It deals with the way we process information, solve problems, remember past events and think about the world around us.

Research Projects and Research Experience

Projects are offered in areas such as personality, psychological disorders, health psychology, handedness, human memory, and emotion and decision making. Not all project areas will be available every term.

Personality and Intelligence

Individual differences in personality, social behaviour, and motivation. Individual differences in intelligence, in basic cognitive operations and in knowledge-based skills such as reading, mathematical ability, and creativity. Dimensions of personally. Sex and other group differences in personality and intelligence. Differences in every-day memory and perception. Differences in lateralization, in diurnal rhythms, in arousal and in stress. Person-situation interactions. Theories of personality and intelligence. Cognitive approaches of personality; state and trait, their relation and dissociation. Cognitive approaches to intelligence; information processing components and sub-skills. Biological theories of personality. The application of learning theory to personality and intelligence. Self theories. Origins of individual differences. Heredity and environment and their interaction. Socialization and social learning. Behavioural and molecular genetics. Pre-natal and perinatal events and their effects on personality and intelligence. The prediction of personality and intelligence from early development.

Psychological Disorders

This course aims to cover a range of psychological disorders. Issues relating to the definition of abnormality and the classification of psychological disorders will be highlighted. A number of psychological disorders including anxiety disorders (panic, phobias, obsessive compulsive disorder), depression, schizophrenia, and eating disorders will be studied. Each will be considered in terms of (1) classification, (2) epidemiology, (3) theories of aetiology/maintenance, and (4) treatment approaches. Empirically derived theories, including the biological, cognitive, and behavioural will be considered. The way in which these have been used in the design of treatments will be outlined. Genetic, sex differences, high risk aspects, and the effects of social class, culture, and life events will be discussed.

Health Psychology

This course focuses on health, well-being and quality of life. Topics may include the following. Theories of health behaviour, health beliefs, illness cognitions, eating behaviour, exercise, sex, screening, stress and illness, pain, placebos. Measuring health, psychological well-being, subjective well-being and broader quality of life. Predicting health behaviour.

Cognitive and Biological Factors in Personality and Health

This course focuses on a range of factors that have been shown in recent years to be of importance in determining variations in thought and behaviour among different individuals. In particular, the course explores a wide range of models for the interaction between cognitive and behavioural processes and variables, such as, neuroticism, anxiety, handedness and mind-body interaction. Those completing the course should acquire a familiarity with major current themes in Individual Differences work together with an understanding of their associated methodologies and applications. They should also gain an appreciation of likely future directions of research in this area.

- Laterality and handedness
- Depression and cognition
- Attention and emotion
- Psychosomatic disorders
- Basic Emotions
- Emotion and memory perspective
- Cognition and medication use in illness
- Emotion and decision making

Perception

The experimental study of the phenomena and processes of sensation and perception, their theoretical interpretation, and the contributions of physiological evidence to our understanding of these processes. Principles of sensory coding and processing in vision, and interactions between the senses. Stimulus detection and psychophysics, psychophysical methods, scaling, categorization, adaptation, masking, and the limitations of capacity in all sensory modalities. Perceptual organization, categorization and information processing. The perception of colour, contrast, depth, motion, and optic flow. Perceptual adaptation; illusions; perception of pattern, form, space, objects, time. The perception of pitch, loudness, melody and auditory direction. Perceptual aspects of memory, attention, imagery, and language; the construction of the perceptual world, orientation and movement within it. Theories of perception. Computational approaches to the study of perception.

Psychology of Women

Topics may include the following. Theories of sex/gender differences: biological, cognitive, social and cultural. Differences in language abilities, spatial abilities, linguistic style, communication style, self esteem, personality, social behaviour, romantic relationships and psychological disorders (e.g., depression, anxiety, eating disorders, psychosomatic disorders). Gender-related violence. Women in the workplace, careers, leadership, media, parenting and family. Gender development and gender stereotypes.

Memory and Cognition

Basic processes and varieties of human memory. Memory retrieval and interference; recognition and recall; short- and long-term memory; working memory; sensory memory; priming; acquisition of cognitive and motor skills; modality-specific and material-specific varieties of coding in memory; mnemonics; every-day memory; mathematical and computational models of learning and memory; impairment of learning and memory. Mental representation; mental and motor imagery and their relation to perception, attention, and action; concept formation; schemata. Problem solving and decision-making; deductive and inductive reasoning; heuristics, biases, and statistical reasoning; human rationality; the role of expertise in problem solving; relation between laboratory studies and 'real world' problem solving. Cognitive neuropsychology; inferences about the representation and use of knowledge from the performance of brain-damaged patients.

Memory and Information Processing

The analysis and modelling of cognitive processes in skills such as word, object, and face recognition; reading, writing, and typing; chess. Cognitive neuropsychology; inferences about normal organization of perceptual, cognitive, and linguistic skills from the performance of brain injured subjects. Attention and the control of action: selective attention and the fate of unattended information; visual search and scene perception; performance of concurrent tasks and temporal processing deficits; automaticity, the effects of practice on performance. Sensory integration, frames of reference, and the representation of space. Connectionist modelling of cognitive processes. The role of conscious awareness in information processing.

Psychological Testing

Psychometric methods. The concepts of reliability and validity. Construction of tests: item analysis; latent trail models; norms and standardization techniques. Methods of analysis; factory analysis and path analysis; meta-analysis; other multivariate techniques.
Applications of the study of individual differences to other areas of psychology, to clinical, educational, organizational, and experimental psychology. Personnel selection. Psychology and health.

Social Psychology

The biological and cultural background to social behaviour, comparisons of animal and human social behaviour; cultural differences in behaviour and attitudes. Verbal and non-verbal expression and communication; conversation, self-presentation, and other aspects of social interaction; social influence, persuasion, and leadership; group performance and
group decision-making; behaviour in organizations; intergroup relations. Social relationships, exchange processes, interpersonal attraction, aggression, helping and cooperation. Cognitive social psychology; perception, inference, attribution, and explanation; social representations, attitudes and beliefs.

Statistics for Psychologists

The course covers the elements of probability theory and the principles of statistics as applied to the design and analysis of surveys and experiments in psychology and to the interpretation of the results of such investigations. Descriptive statistics and statistical presentation using graphs and simple measures of central tendency and dispersion. Frequency distributions. Samples and populations. The addition and multiplication laws of probability; conditional probability and Bayes' Rule. The binomial, Poisson and normal distributions: their properties and uses and the relationships between them. Statistical inference using sampling distributions, standard errors and confidence limits. Common uses of z, t, chi-square and F tests and nonparametric tests including tests of hypothesis for the mean, median or proportion of a single population or for the difference between two or more populations, goodness-of-fit tests and tests of difference between two population distributions. Parametric one-way Analysis of variance. Kruskal-Wallis non- Parametric analysis of variance. The analysis of 2-way contingency tables using chi-square tests. Linear regression and correlation.

Language and Cognition

The psychology of language processes; perception, comprehension, production, and acquisition. Speech perception and production: basic physical, sensory, and physiological processes; basic cognitive structures and processes and their interaction; perception and production of written words; interrelations of spoken and written language. Understanding of text and discourse; memory for text; psychological processes in reading; anaphora; verbal reasoning; language and thought; linguistic prototypes; machine models of language processing. Language pathologies, including deafness; acquired language disorders; cognitive neuropsychology of language; neuroanatomy of language. Language acquisition: Acquisition of syntax, semantics and pragmatics. Acquisition of language in non-human primates. Bilingualism and second language acquisition; acquisition of reading and writing skills.

Developmental Psychology

Psychological development in humans; the biological and physiological, environmental and heredity influences which affect development; evidence from comparative studies.
The neonate, the infant, the pre-school child, school children: changes during adolescence; adulthood and further stages of ageing. Sex differences. Developmental aspects of perceptual and cognitive processes: behavioural repertoire including exploration and play, language, motor skills and social skills, learning, training, and socialization; the development of intelligence and personality; developmental disorders and handicaps; computational models of development. Observational, experimental, and psychometric methods; theoretical issues in developmental studies, including their mathematical treatment.

Mathematical Development and Disabilities

- Innate number concepts
- Children's development
- Culture and language
- Brain and mathematics
- Individual differences
- Dyscalculia
- Interventions
- Attitudes and emotions

Developmental Questions in Science and Religion

- Introduction: Psychological and Developmental
- Causal understanding in science and religion
- Origins of things: Teleological and cosmological understanding
- Ontological reasoning: Children's theories and domains of knowledge
- Theory as a core domain
- Evolutionary accounts of religion
- Religion and the brain: Neurotheological and genetic approaches
- Morality and religion: Perspectives from evolution, neuroscience, and psychology

Psychology of Religion

Michaelmas Term:

- Religion and contemporary psychology
- Main issues in the study of religious experience Origin of religious concept: cognitive or affective
- Religious conversion
- Moral development and religion The psychology of prayer
- Mysticism: normal or abnormal religious experience?
- Applied psychology of religion: education and health

Hilary/Trinity Terms:

- Historical background - the major figures of the past
    - William James (1842 - 1910) and friends
    - Freud, Jung and the psycho-analytic revolution The Psychology of Religious Experience and Belief The Psychology of Religious Behaviour
- The Origin and Development of Morality and Faith. Religion, healthy or unhealthy?
- Cults or New Religious Movements?
- All in the brain? Or all in the mind? Psychosis or spirituality?
- Does age make a difference? Are the young too young to understand? Is religion a prop for the elderly?

- The effects of personality on religious belief, experience and behaviour. Is there a 'religious' personality?
- Gender, belief, experience and behaviour. Are men or women more 'religious'? Is this the product of gender stereotypes or another underlying cause?

Research Methods

This course will focus on research methods and their practical applications. The balance of the topics will depend on the background of the student. Topics may include experimental design, qualitative methods, correlational studies, clinical trials, single case studies, longitudinal studies, time sampling, interviews, surveys, analysis of variance, multiple regression, meta-analysis, factor analysis and ethical issues.

Psychology of Adolescence

Topics may include the following. General and biological changes in adolescence. Development of cognitive processing, sense of identity, gender roles, moral judgment, the social self in the family and among peers, self-esteem and sense of achievement. Influence of culture. Problems of adolescence: depression, suicide, eating disorders, shyness, alcohol and drug abuse, juvenile delinquency.

Theoretical Perspectives in Psychology

Psychology, science and the foundations of modern psychology. Helmholtz, Fechner and Weber: the psychophysics approach. Wundt and the foundation of experimental psychology. The work of William James. Psychology of the unconscious: Freud and the psychoanalytic approach. Evolutionary psychology. The Gestalt approach. Behaviourism: Pavlov, Watson and Skinner. The developing mind: Binet and Piaget. Measurement of mind: The cognitive revolution and cognitive science.

Case Studies in Neuropsychology

The development of neuropsychological science and the assumptions of the neuropsychological approach. Case studies demonstrating acquired deficits in reading, writing, spoken language comprehension, language production, object recognition, face recognition, memory and consciousness. For example: aphasia, dyslexia, agraphia, amnesia, agnosia, prosopagnosia, dysexecutive syndrome, blindsight and unilateral neglect. Where possible classic cases will be used such as those by Broca and Wernike, Sperry’s split brain studies, Milner’s study of HM, Phineas Gage, Balint’s patients and Weiskrantz’s patient DB.

Behavioural Neuroscience (Brain and Behaviour)

Sensory processing and sensory awareness. The control of action. Higher order processing: perception and cognition (association areas). Neural mechanisms of attention, arousal, and sleep. Central nervous control of eating and drinking. Central nervous control of emotion. Hemisphere differences. Human neuropsychology: disorders of perception, attention, cognition, and action. Functional brain imaging of perception, attention, cognition, and action.

Cognitive Neuroscience

- Principles of Brain Organisation: Modularity Principles of Brain Organisation: Top-down processing Methods: Recording
- Blindsight
- Vision: Agnosias and Object Recognition Object perception: Binding
- Attention: perceptual modulation Control systems
- Consciousness
- Visual Short Term Memory Executive function: working memory Executive function: cognitive control Decision marking
- Social neuroscience

Computational Neuroscience

Understanding the brain is one of the great scientific challenges of our time. However, the brain is an exemplar of what mathematicians call a complex system. The behaviour of such a system arises from the interactions between vast numbers of biological components such as neurons and synapses. Fundamental properties of the brain such as perception, intelligence and consciousness emerge from this sea of interacting elements. Therefore, in order to understand the workings of the brain, computer models are needed to investigate how individual neurons interact in the brain to give rise to the properties that experimental psychologists observe. These kinds of models are known as neural networks.

Computational Neuroscience focuses on the architecture, function, and properties of a number of simple classes of neural network: pattern association, auto-association, competitive networks, error-correction and reinforcement learning. Later on, the course looks at how these basic neural networks provide the building blocks for larger-scale models of brain function, such as visual object recognition in the ventral visual pathway, episodic memory in the hippocampus, and motor function in the cerebellum and basal ganglia. The course links evidence about the connections of real networks in the brain, the firing properties of neurons, and studies of synaptic modification to produce theories about how the brain actually works.