Introduction to Cognitive Psychology

LMH Summer Programmes are provided by Lady Margaret Hall, a college in the University of Oxford

Course:	Introduction to Cognitive Psychology
Available:	Programme Session 2: 21st July 2025 to 8th August 2025
Lectures:	18 Hours
Seminars:	12 Hours
Tutorials:	3 Hours
Independent Study:	Approximately 120 Hours
Recommended Credit:	15 CATS / 7.5 ECTS / 4 US Credits

About this Course:	How are we able to focus on one thing rather than something else? Why do we remember some things and forget others? What makes human beings intelligent? This course offers the opportunity to explore these questions and more through an introduction to Cognitive Psychology, a key area within Psychology which examines how the brain works. You will learn about the role of attention as a fundamental cognitive process and how it relates to short and long-term memory; you will examine the phenomenon of learning, looking at learning theories and neuroimaging evidence to discover how learning occurs in the brain; and you will investigate the role of cognition in language, sleep, and consciousness. Throughout the course you will learn about the methods involved in studying Psychology and how to think critically about empirical research. Introduction to Cognitive Psychology offers a solid foundation for future study in Psychology and provides an opportunity to hear about cutting-edge research taking place here at the University of Oxford.
Course Overview:	<u>Week 1: Building Blocks of Cognition</u> • Understanding the Brain • Attention and Executive Functions • Working Memory • Long-Term Memory Lecture 1 explores the **phenomenon of human cognition** and key aspects of the cognitive psychology approach to studying cognitive processes. Lecture 2 focuses on **attention as a fundamental cognitive process** and more broadly **executive functions**. Attention is often seen as a gatekeeper, as it has a key role in determining which information will be processed and to what extent, and which information will be ignored. We will look at the factors that drive attention

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	orienting, review key theories of attentional control and discuss the role of top-down and bottom-up processes in attention. Lecture 3 dives further into the domain of **executive functions** with a particular focus on **working memory**. The ability to retrieve and maintain information, and operate on it lies at the core of complex cognitive processes. In this lecture, we will explore the main operating principles of working memory its capacity limitations. In addition, we will discuss how alterations to executive functions and working memory can be reflected in behaviour. Lecture 4 turns towards **long-term memory** as a core cognitive function. You will learn how memories are created, where they are stored and what happens when the long-term memory system is damaged. The lecture will draw on dominant theoretical views, behavioural and neuroimaging evidence, as well as insights from neuropsychological studies with patients suffering from brain damage. During the seminars, we will discuss why cognitive psychology needs to understand the brain and neural basis of cognitive functions. In addition, we will focus on several aspects of brain functioning in smaller groups to prepare for a larger group discussion with an aim to bring together insights on different levels of neural architecture and identify levels that might be most informative for understanding cognition. <u>Week 2: Higher Cognitive Processes – what makes humans intelligent?</u> • Reasoning and Decision-Making • The Emergence of Complex Cognitive Functions • The What, Where, and How of Learning • Learning in Context Lecture 5 focuses on **reasoning and decision making**. The ability to make decisions is a critical part of everyday functioning, from deciding which spoon to take from a drawer, whether to turn left or right at a crossing, to more complex ones as to decide what subject to study, and what jobs to apply for. In this lecture, you will learn about guiding principles of decision making, conscious and unconscious biases that operate in the decision-making process, and how this can be used to shape reasoning. Lectures 6 and 7 turn to **the phenomenon of learning**. Alan Turing beautifully pointed out that "the real secret to human intelligence is our ability to learn". In these lectures, we will explore what learning is, bring together previously covered topics and investigate how their interplay makes the process of learning possible. We will cover contemporary **learning theories** and **neuroimaging evidence** that provide a better understanding of how learning occurs in the brain. We will particularly focus on the **complementary learning systems** approach, and discuss the role of fast and slow learning, and their role in human cognition. Lecture 8 approaches cognitive functioning from a **developmental perspective**, and provides an overview of the latest research in the field of cognitive development, which studies the trajectory of cognitive abilities over the course of the lifespan, with a particular focus on their emergence in early childhood. Understanding how cognitive abilities emerge in **the developing brain**, as well as how they decline in **the ageing brain** has a key role in our understanding of the cognitive functioning and highlights aspects more susceptible to improvement or damage, hence providing avenues for effective cognitive interventions. In the seminars we will critically interrogate theoretical stances and studies that address the question of the extent to which cognition and cognitive attainment are determined by genes and by the environmental influences.

	Week 3: Cognition in Context • Cognition and Language • Cognition and Sleep • Cognition and Consciousness • Cognition and the Body Lecture 9 focuses on **language and cognition**. We will explore cognitive prerequisites of language and neural basis of language processing. In addition, we will discuss whether language is a cognitive function, and how language and cognitive processes are interconnected. We will bring together traditional philosophical ideas and latest research to discuss whether language shapes the way we see the world, or vice versa. Lecture 10 explores the role of **sleep in cognition**. Given the amount of time humans spend asleep, it is necessary to understand the impact of sleep on cognitive processes. We will focus on the role of sleep in learning and memory, and bring together psychology and neuroimaging literature to understand the role sleep plays in cognitive functioning. Lecture 11 focuses on how **cognitive processes give rise to consciousness**. We will also discuss the latest research on visual imagery and aphantasia, and how latest developments in research methods enable us to gain deeper understanding of these complex and difficult to capture cognitive phenomena. Lecture 12 looks at the interface of **cognition and the body**. While focus of most research has been on the role of brain and central nervous system in cognition, more studies extend this approach and investigate brain-body interactions and contributions of the peripheral nervous system and the rest of the body to cognitive functioning. We will particularly focus on the brain-gut axis and review latest findings on the impact of gut microbiome on cognitive functioning. Seminar discussions will include an exploration of the links between language and the perception of colour.
Key Texts:	Eysenck, M., *Cognitive Psychology: A Student's Handbook*, 2020, London. Ward, J., *The Student's Guide to Cognitive Neuroscience*, 2015, London.
Learning Outcomes:	By the end of this course, you will: • Be able to demonstrate understanding of the key issues and topics within Cognitive Psychology, including current areas of research. • Be able to demonstrate understanding of the psychological and biological methods behind Cognitive Psychology. • Be able to evaluate critically empirical findings from psychological research.
Admissions Requirements:	LMH Summer Programmes are designed for students who want to gain and develop knowledge in their chosen subject area. LMH Summer Programmes are intensive courses of study aimed at undergraduates who have completed one, two, or three years of their degree, or entry level postgraduate students. We will consider each applicant's academic ability and expect successful applicants to have a minimum grade point average equivalent to 2:1 level on the British grading scale. For example, this would mean at least a 3.2 GPA on the 4.0 grading scale in the United States, and 80% in China. **This course would suit students from a range of disciplines who are interested in the scientific study of mental processes. Prior formal academic experience in Psychology is not required.**

	To participate fully in the programme all students will need to have proficiency in English. English language requirements for students who are not native English speakers: • TOEFL iBT score of 98 • IELTS score of 7.0 (no less than 6.5 in each component) • Duolingo English Test score of 125 (no less than 115 in each section) • Cambridge English Scale score of 185 If the language of instruction in your home institution is English you do not need to provide evidence of your English proficiency.
Teaching Methods:	Core syllabus material will be covered in lectures. Students attend four lectures each week and each lecture lasts 90 minutes. Seminars in smaller groups offer students space to discuss and debate, to dig deeper into difficult concepts, and to explore their own ideas. Student contribution to seminars is vital, and tutors will ensure everyone takes part in discussions. Seminars last 1 hour and students will take part in four seminars each week. Independent study is a crucial part of an LMH Summer Programme and of the Oxford teaching model. Tutors will recommend important reading to do between lectures and seminars that will enable students to come to class equipped to understand the information presented and prepared to take part in discussion and debate. Each week students will have an assignment of independent work to complete and submit in advance of the tutorial. There is an appropriate amount of space in the timetable to complete the necessary reading, preparation, and assignments. Students should expect to do around 40 hours of independent study each week. The final class each week is a tutorial, a very small class typically including only 2-4 students and central to the teaching methods used by the University of Oxford and on LMH Summer Programmes. Guided by their tutor, students will receive feedback on their assignments and be challenged to defend, justify, or even rethink their work and ideas. These rigorous academic discussions help develop and facilitate learning in a way that cannot be done with lectures and seminars alone.
Assessment:	On a three-week LMH Summer Programme students produce one piece of assessed work every week, which is submitted to the tutor and then discussed in a tutorial. At the end of each week students will receive a percentage grade for their submitted work. Each week's work counts for a third of the final percentage grade, so the final grade is an average of the mark received for each piece of work. Students who stay for six or nine weeks will receive a separate grade for each 3-week course.
Academic Credit:	Lady Margaret Hall will provide a transcript of students' assessed work, and can send this directly to your home institution if required. LMH Summer Programmes are designed to be eligible for academic credit, and we will communicate with home institution to facilitate this as needed. As a guide, we recommend the award of 15 CATS / 7.5 ECTS / 4 US Credits for each 3-week course.