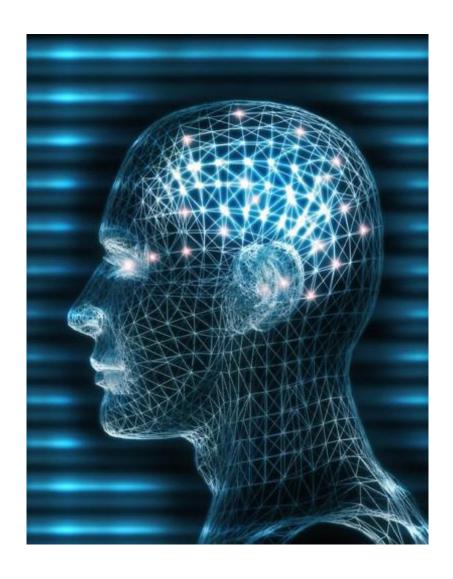# C8508
Cognition in Clinical Contexts

2017/18 Module Handbook

Official Module Code: C8508

Module Convenor:

Dr Ryan Scott, School of Psychology, 1C3, Pevensey I. Tel (67)8304. Email: r.b.scott@sussex.ac.uk

Type of Module:

Cognition in Clinical Contexts is a compulsory first year module, for all Psychology majors.

Syllabus:

This module will introduce students to the aims, methods, theories and empirical findings associated with a scientific approach to studying the human mind. Students will learn how psychologists develop models of cognitive function that are tested against data from behavioural studies of healthy individuals, as well as from individuals with brain damage or psychopathology. The module will cover five core topics: perception, attention, thinking, memory, and language. These are then followed by a set of four lectures covering the more diverse topic of cognition and behaviour. Each core topic will begin with one or two background lectures that introduce key concepts and experimental approaches. The background lectures are typically followed by a lecture which addresses the topic from a neuropsychological approach, considering how that aspect of cognition is affected by brain injury; covering material such as agnosia, neglect, and amnesia. Other lectures will cover topics from a more psychopathological approach, for example examining the role of attentional biases in anxiety.

Module Aims and Objectives:

By the end of the module, a successful student should be able to:
- Demonstrate an understanding of current scientific approaches employed in the study of psychology.
- Demonstrate knowledge of key terms and concepts within the field of cognitive psychology.
- Demonstrate knowledge of how cognitive function can break down as a result of brain injury and/or psychopathology.
- Conduct and effectively communicate via a written lab report an empirical investigation using methodologies and experimental stimuli typically employed in cognitive psychology research.

Module Summary:

Cognition in Clinical Contexts is intended to replace traditional first term, first year "Introduction to Psychology" modules. Such modules are necessary as around 30% of first year students have not studied psychology at A-level, and thus are not familiar with many of the basic psychological ideas and concepts that are required in order to study and appreciate the subject at degree level. The module aims to introduce the topic of cognitive psychology in a way that will not overwhelm students for whom the topic is completely new, and at the same time take a novel approach that we hope will appeal to students who have already covered some of the material at A-level.

Within psychology, the term cognition refers to the mental abilities involved in receiving, processing, storing and using information. As such, the discipline of cognitive psychology is concerned with topics such as *perception* - our ability to make sense of the world through our senses; *attention* – our ability to focus in on a subset of the information received by our senses; *memory* – our ability to store and retrieve information; *language* – our ability to understand and communicate verbally; and *thinking* - our ability to reason, problem solve and make decisions. Given this definition it can be argued that all psychological phenomena can be considered to be cognitive phenomena – and as a result a solid understanding of cognitive psychology is critical to understanding other sub-disciplines within the field, such as clinical psychology, social psychology, and developmental psychology.

Cognitive psychology employs a wide range of experimental techniques in order to test hypotheses about how mental processes such as attention and memory operate. These techniques include standard experimental psychology approaches that involve devising experiments (such as seeing how many words people can recall at certain intervals after learning a list) and testing large numbers of healthy participants. However, many significant advances in cognitive psychology have come about not through studying healthy people, but by studying what happens when cognition goes wrong. Cognition can go wrong in many ways – most typically after some kind of brain damage such as a head injury or neurological disorder such as Alzheimer's disease - but dysfunctional cognitive processes also lie at the heart of "psychological" disorders such as anxiety and mood disorders.

In this module you will learn what psychologists have discovered about healthy cognition, and also what can happen when normal cognitive processes go wrong.

Teaching:

This involves two lectures each week and three practical classes spread throughout the term.

Assessment:

The module is assessed by an Unseen exam (MCQ assessment) with (70%) and a Report (Lab Report Exercise) (30%). All information concerning assessment will be available on Study Direct. The assessment deadlines will appear in your timetable viewable through Sussex Direct. Your Report will be submitted electronically and feedback provided electronically. The electronic submission facility is provided as part of the Study Direct site.

Please refer to the frequently asked questions available on the following webpage for further information:

www.sussex.ac.uk/adqe/standards/examsandassessment/esubmission

Information on the following can be found at the link below:
•   Submitting your work
•   Missing a deadline
•   Plagiarism and Collusion - Academic Misconduct
•   Late penalties
•   Exceptional circumstances
•   Exams
•   Help with managing your studies and competing your work
•   Assessment Criteria

http://www.sussex.ac.uk/psychology/internal/students/examinationsandassessment

A variety of assessment modes are used to develop and test different types of knowledge, skills and aptitudes. The assessment modes have been approved to test the course and module learning outcomes. Written submissions usually form an integral part of assessment at all levels. Written submissions include essays, reports, logs etc as appropriate to the module and the skills that you are being expected to develop. Examinations usually focus more on your ability to use your knowledge of the subject, rather than simply testing your memory for facts. Feedback is provided to support you in future assessments.

Unseen examinations are typically used to assess your level of knowledge and/or understanding of the discipline without the support of textbooks, notes or internet resources, unless these have been specifically permitted by the examination rubric. For students registered with the Student Support Unit an alternative mode may be approved as a Reasonable adjustment with the Student Support Unit.

However, when, in accordance with the academic judgement of the School, where an unseen exam has been approved for a module to assess competence

standards, learning outcomes and any accreditation requirements, an alternative mode may not be approved as a Reasonable Adjustment for a student registered with the Student Support Unit. If you have any concerns, please discuss these with the Student Support Unit, who will liaise with the school.

Module Monitoring and Student Feedback:

The module will be monitored using a variety of formal and informal methods. There are two forums specifically for providing feedback on the module situated on the StudyDirect website. You are encouraged to use these at any time. In addition, lecturers on the module encourage questions and feedback, either during or after lectures. Finally, there will be the opportunity to provide feedback at the final lecture, and the module organiser, Dr Ryan Scott, will be available during his Office Hours for individual discussion of issues relating to the module.

We continually strive to improve the module and this is largely achieved through responding to your feedback. So, should you have any concerns about the module or suggestions for improvement, please don't keep them to yourself. Please let us know, either through the forum, by email r.b.scott@sussex.ac.uk, or in person.

LECTURE SCHEDULE

(Use Sussex Direct to confirm times and locations)

Lecture	Title	Date
1)	Introduction to CCC / Background (RS)	Mon 25th Sep
	Perception	
2)	Object Recognition (RS)	Fri 29th Sep
3)	Face Recognition (RS)	Mon 2nd Oct
4)	Agnosia / Prosopagnosia (Video - RS)	Fri 6th Oct
5)	Synaesthesia (JW)	Mon 9th Oct
	Attention	
6)	Attention (RS)	Fri 13th Oct
7)	Attentional Biases in Anxiety (SF)	Mon 16th Oct
8)	Neglect (SF)	Fri 20th Oct
9)	Lecture on Lab practical (RS)	Mon 23rd Oct
	Thought	
10)	Knowledge (RS)	Fri 27th Oct
11)	Reasoning / Decision Making (RS)	Mon 30th Oct
12)	Dysexecutive Syndrome (CB)	Fri 3rd Nov
	Memory	
13)	Working Memory (CB)	Mon 6th Nov
14)	Long Term Memory (CB)	Fri 10th Nov
15)	Amnesia (CB)	Mon 13th Nov
16)	Memory and Dementia (JR)	Fri 17th Nov
	Language	
17)	Language and reading (AG)	Mon 20th Nov
18)	Language problems: Aphasia (AG)	Fri 24th Nov
19)	Reading problems: Dyslexia (AG)	Mon 27th Nov
	Behaviour	
20)	Volition (RS)	Fri 1st Dec
21)	Cognitive Behavioural Therapy (AR)	Mon 4th Dec
22)	Impulse Control (HC)	Fri 8th Dec
23)	Cognition and Appetite (MY)	Mon 11th Dec
24)	Revision and exam preparation (RS)	Fri 15th Dec

Dr Ryan Scott (RS), Prof Jamie Ward (JW), Dr Chris Bird (CB),
Dr Sophie Forster (SF), Prof Jenny Rusted (JR), Prof Jane Oakhill (JO),
Dr Hans Crombag (HC), Prof Martin Yeomans (MY), Dr Alison Roberts (AR)

PRACTICAL SCHEDULE

(Use Sussex Direct to confirm times / groups / locations)

There are three practical classes included within the module. During these sessions you will carry out a unique psychological experiment, collate and analyse the data collected, and examine the extent to which the data collected supports the experimental hypotheses. There will also be a related lecture on the Monday after the first practical session. This will provide further information about the goals of the experiment and how to approach the analysis and practical report.

Lab session 1: Background and data collection

In this session you will be given some background on the experiment to be conducted. You will then participate in the study, typically an original experiment, and thus contribute to the data that you will subsequently analyse in session 2.

Lab session 2: Collating and analysing the data

You will be shown how to collate and structure the data that was collected in Lab session 1. You will then be guided through the process of some basic analyses of the data, graphing the results to aid interpretation.

Lab session 3: Writing up a practical report

Your practical assignment on the module will include a practical report that describes the experimental hypotheses, the design, a summary of the results and what conclusions can be drawn. The third lab session is aimed to give you support in preparing your practical report.

Note, this is the only assignment for the module and is referred to as a 'Lab Report' on Sussex direct.

Recommendations for further reading:

The assessment of this module is based **_only_** on the material covered in the lectures i.e. the exam questions are drawn from the lecture material **_not_** further reading. However, your understanding will obviously benefit from reading around the topic, and it is hoped that you will want to read more when you find topics particularly interesting. To facilitate this we provide further reading for each of the lectures and make it available for download on Study Direct. There is no obligation for you to read it all but it is there for you if you want it and will certainly improve your grasp of the subject.

The further reading includes book chapters and journal articles. Most of the book chapters have been taken from the following books. You are not required to purchase these as the relevant chapters are available on Study Direct. However, if you want to purchase or borrow a book to read multiple chapters relating to the course, these all cover a lot of relevant material. There are lots of copies of each in the library. The chapters relevant to each lecture and details of which are available for download on study direct are given with the lecture summaries in the next section.

Groome, D. (2006) *An introduction to cognitive psychology: processes and disorders, 2nd Edition.* **Psychology Press, London.**

This is a well written book which covers much of the material taught on this module. Unlike most cognitive psychology textbooks, this text contains chapters that deal specifically with what happens when cognitive processes go wrong. However, it deals with the material at a reasonably advanced level, and goes into more depth than is required for a first year introductory module. You might find it hard going in places. The library has plenty of copies.

Matlin, M (2004) *Cognition (6th Ed) / Cognitive Psychology (7th Ed).* **John Wiley & Sons, London.**

A 7th Edition of this book has recently been published, the international student version of which is, somewhat confusingly, called "Cognitive Psychology". The library has quite a few copies of the 6th Edition, and a couple of copies of the 7th. Either text will be fine.

Parkin, A.J. (2000) *Essential Cognitive Psychology.* **Psychology Press, London.**

Eysenck, M. (2006*) Fundamentals of Cognition.* **Psychology Press, London.**

Both of the Parkin and Eysenck books also provide a straightforward introduction to the basics of cognitive psychology, but provide less of a focus on the clinical context. The library has a good number of both books.

Lecture Summaries:

Note: The full titles of the books referred to below by author i.e. Eysenck, Matlin, Groom, and Parkin, are listed above.

Lecture 1: Introduction and background.

In the first half of the lecture the module's key aims and rationale will be explained. We will take a look at the module handbook and deliver important information concerning assessment and the practical classes. The second part of the lecture will provide a brief historical background to the development of cognitive psychology, and explain its importance and relevance to other disciplines within psychology.

Sources of further reading (Sources in bold are available on Study Direct): *Matlin:* Chapter 1; *Groome*: Chapter 1; *Parkin:* Chapter 1; ***Eysenck:* Chapter 1.**

Lecture 2: Object Recognition

This lecture will introduce the subject of object recognition in the wider context of perception. Different models of object recognition will be outlined and different approaches to testing those theories described. At the end of the lecture you will have learned about how cognitive psychologists test theories of visual cognition using data from behavioural studies as well as brain imaging methods.

Sources of further reading (Sources in bold are available on Study Direct): ***Matlin:* Chapter 2 (p33-53)**; *Groome:* Chapter 2 (p22-47); *Parkin:* Chapter 2; *Eysenck*: Chapter 5.

Lecture 3: Face Recognition

This lecture will review the cognitive processes involved in face recognition. We will examine different cognitive models of face recognition and the way in which deficits in face recognition (prosopagnosia) have been able to further our understanding of the processes involved. You will learn about how cognitive psychologists have sought to test different theories of face recognition and the role behavioural and imaging studies have played in our understanding.

Sources of further reading (Sources in bold are available on Study Direct): ***Eysenck: Chapter 6**; Matlin:* Chapter 2 (p53-57).

Lecture 4: Agnosia / Prosopagnosia

The aim of this lecture is to review impairments to cognitive processes that cause disorders of object recognition (agnosia) and face recognition (prosopagnosia). The lecture will include a video of a first-hand account from someone suffering from these deficits. You will see the benefits and challenges involved in drawing insights about cognitive processes from individuals with such impairments. At the end of the lecture you will have learned about how different types of deficit can be identified and how psychologists have sought to account for the different characteristics these have.

Sources of further reading (Sources in bold are available on Study Direct): ***Groome:* Chapter 4 (p113-129)**; *Eysenck: Chapter 5 (p68 – 71)*

Lecture 5: Synaesthesia and multisensory perception

We tend to think of our senses as separate. Whilst this might be true of our sense organs (our eyes are separate from our ears) it is not true of the way that information is processed in the brain. This lecture will present evidence showing how information from the different senses is linked together in everyone and describe a condition known as synaesthesia in which music may trigger colours, or vision may trigger touch. This affects a couple of percent of the population but is not strictly a 'clinical' condition (as it is not linked to impairment). It is an atypical way of experiencing the world with important implications for psychology.

Sources of further reading (Sources in bold are available on Study Direct):
Ward (in press). Synaesthesia, forthcoming chapter in '*The New Handbook of Multi-Sensory Processes*'.

Lecture 6: Attention

There is relatively little agreement amongst psychologists as to what exactly the term "attention" refers to. The brain clearly has a limited capacity for processing information in depth, so we need some way of filtering the information received by our senses and selecting only the most relevant and important given our current goal. This lecture will explore the ways in which psychologists have attempted to study and define attentional processes, and consider the relationship between attention and memory as well as how attention relates to concepts such as consciousness.

Sources of further reading (Sources in bold are available on Study Direct):
Matlin: Chapter 3 or *Groome:* Chapter 3; *Parkin:* **Chapter 3**; *Eysenck:* Chapters 8, 9 & 10.

Lecture 7: Attentional biases in anxiety

This lecture will look at how cognitive paradigms have been applied to help us understand biases in the way that anxious people perceive the world. It will describe how cognitive tasks have been used to demonstrate that anxious individuals attend to threat in their environment and interpret ambiguous situations negatively. The lecture concludes by discussing whether these attentional biases have a causal role to play in the development of anxiety.

Sources of further reading (Sources in bold are available on Study Direct):
The library contains many textbooks on abnormal psychology (RC 454) – the chapter on anxiety in any of these books, or the relevant chapter in a more general introduction to psychology textbook (e.g. Davey, G. C. L. (2005). Complete Psychology. London Arnold. [Chapter 33] would provide a general background to anxiety disorders.
Field et al. (2011) Information processing biases in child and adolescent anxiety: a developmental perspective

Lecture 8: Neglect

The term neglect refers to a neuropsychological condition that often arises after damage to the right parietal cortex. Patients with neglect appear unable to

orient or respond to information appearing on their left. This lecture will describe the techniques that psychologists have used to investigate neglect, and the evidence that suggests that the disorder may reflect dysfunctional attentional processes.

Sources of further reading (Sources in bold are available on Study Direct): *Groome:* Chapter 4, p107-113; *Eysenck*: Chapter 9 (p119 – 123); **Ward (2006) The Student's Guide to Cognitive Neuroscience Chapter 7.**

Lecture 9: Lecture on Lab practical

This lecture occurs at the end of the week in which you complete the first of lab session. The lecture will provide an overview of the experiment in which you participate, describe the goals and rationale for the study, and illustrate how we might consider analysing the data. You will also be given guidance on the nature of the practical assignment. This lecture complements but does not replace the practical sessions. It is essential that you attend each of the lab sessions in order to complete the assignment.

Lecture 10: Knowledge

The aim of this lecture is to review how we store and retrieve information about the world. We will examine evidence for a distinction between episodic memory (memory of autobiographical events) and semantic memory (memory of meanings and concepts unrelated to personal events). We will explore different cognitive models of how knowledge is stored and the strengths and weaknesses of each. Finally we will touch on the insights provided by some progressive memory deficits.

Sources of further reading (Sources in bold are available on Study Direct): *Matlin:* Chapter 8 or *Groome:* Chapter 5; *Parkin:* **Chapter 8.**

Lecture 11: Reasoning / Decision making

Psychologists have attempted to narrow down the enormous range of mental activities that could be termed "thinking" by focussing on those involved in problem solving, reasoning and decision making. This lecture will outline some of the techniques psychologists have developed to study these critical cognitive processes, and some of the intriguing, and often surprising results.

Sources of further reading (Sources in bold are available on Study Direct): *Matlin: Chapter 12; Groome:* Chapter 8; *Parkin:* Chapters 14 & 15; *Eysenck:* Chapters 23 and 26.

Lecture 12: Dysexecutive Syndrome

The executive functions of human cognition refer to skills such as problem solving, planning, decision making and the ability to inhibit habitual behaviours. Damage to the frontal lobes can result in what neuropsychologists refer to as the dysexecutive syndrome. This fascinating disorder is characterised by personality changes such as increased impulsivity, and cognitive deficits such as difficulties in decision making and planning. This lecture describes the key

features of dysexecutive syndrome, and places them within the context of models of healthy cognitive function outlined in earlier lectures.

Sources of further reading (Sources in bold are available on Study Direct): *Groome:* **Chapter 9.**

Lecture 13: Working Memory

The concept of working memory is closely linked to that of attention, and, as with attention, there is relatively little agreement amongst psychologists as to what exactly the term means. Broadly speaking, working memory refers to our ability to transiently "hold in mind" information that is no longer present in the environment. This lecture will describe how psychologists have studied short term, or working memory, and how the concept relates to attention and long term memory.

Sources of further reading (Sources in bold are available on Study Direct): *Matlin:* **Chapter 4***; Groome:* Chapter 6; *Parkin:* Chapter 4; *Eysenck:* Chapter 12.

Lecture 14: Long term memory

Our memories are central to our sense of self. Moreover the ability to remember facts and events, people and places is critical for normal independent living. Psychologists seek to understand memory in terms of how we are able to encode, store and retrieve information. This lecture will describe the different approaches psychologists have employed to study memory, and outline some of the key models that have been developed.

Sources of further reading (Sources in bold are available on Study Direct): *Matlin:* **Chapter 5***; Groome:* Chapter 5; *Parkin:* Chapter 5; *Eysenck:* Chapters 11-16.

Lecture 15: Amnesia

There are a large number of very different ways in which human memory can become dysfunctional, but one of the more widely documented is termed amnesia. Amnesic patients typically have difficulty in learning and remembering information presented to them. This disability may be accompanied, to a greater or lesser extent by an inability to remember information that they had previously acquired. This lecture will describe amnesia with reference to the models of long term memory outlined in the previous lecture.

Sources of further reading (Sources in bold are available on Study Direct): *Groome:* **Chapter 7**; *Parkin:* Chapter 5; *Eysenck:* Chapter 11.

Lecture 16: Memory and Dementia

Most forms of dementia are characterised by severe and progressive memory loss; this lecture will provide an introduction to the dementias, the different patterns of memory loss that are observed, and the brain systems that are implicated in these deficits. It will also consider the functional consequences of memory loss in dementia and clinical approaches to remediation.

Sources of further reading (Sources in bold are available on Study Direct): *Groome:* **Chapter 7; Deary et al. (2009) Age-associated cognitive decline.**

Lecture 17: Language and Reading

The aim of this lecture is to review the cognitive processes used to understand language and reading. You will learn the defining aspects of language, what separates Human from Chimp language, the main components in language comprehension and production and the regions of the brain associated with the different aspects, and the different routes to comprehending written language.

Sources of further reading (Sources in bold are available on Study Direct): *Matlin*: **Chapter 9**; *Groome*: Chapter 10; *Parkin*; Chapters 10 & 11; *Eysenck* Chapters 17 & 18.

Lecture 18: Language problems - Aphasia

This lecture will explore different problems in language and the phenomenon of aphasia – an impairment of language comprehension. You will learn about different types of aphasia, how these differ, and what they can tell us about the underlying cognitive processes in normal language comprehension.

Sources of further reading (Sources in bold are available on Study Direct): *Groome*: **Chapter 11** (best); *Matlin*: Chapter 9 (p307-309); Eysenck Chapter 20 (p300-304).

Lecture 19: Reading problems - Dyslexia

The aim of this lecture is to review the impairments in cognitive processes that cause disorders of word recognition, known as dyslexia. You will learn about the different types and causes of dyslexia and how they relate the cognitive models of reading.

Sources of further reading (Sources in bold are available on Study Direct): *Groome*: **Chapter 11 (p331-334).**

Lecture 20: Volition

This lecture introduces the subject of volition. It first provides some brief philosophical background on the relation of volition and free will before exploring the different experimental approaches that have been applied to the subject. The emerging picture of volitional processes is then considered in the context of disorders of volition such as anarchic hand and utilisation behaviour. The lecture concludes with an overview of outstanding questions and the potential moral implications to emerge from the research.

Sources of further reading (Sources in bold are available on Study Direct): **Haggard, P., (2008). Human volition: towards a neuroscience of will.** *Nature Reviews: Neuroscience, 9, 934-946.*

Lecture 21: Cognitive Behavioural Therapy

This final subject lecture introduces what is arguably one of the most direct examples of the application of cognition in clinical contexts - cognitive behavioural therapy (CBT). It describes what CBT is, the principles behind it, what it looks like in practice, and the evidence for its effectiveness in the treatment of a variety of disorders

Sources of further reading (Sources in bold are available on Study Direct):
NHS Choices: CBT; Kingdon & Dimech (2008) Cognitive and behavioural therapies: the state of the art. *Psychiatry, 7,(5), 217-220.*

Lecture 22: Impulse Control

The goal of this lecture is to introduce the topic of impulse control in the context of addiction. It explores different perspectives onto the question of whether addiction should be characterised as a brain disease or a choice. It examines how differences in impulsivity may be a risk factor for drug use, how drugs bring about changes in the functioning of the brain, and how this may in turn result in reduced inhibitory control and increased craving.

Sources of further reading (Sources in bold are available on Study Direct):
Jentsch and Taylor (1999) Impulsivity resulting from frontostriatal dysfunction in drug abuse: implications for the control of behavior by reward-related stimuli

Lecture 23: Cognition and Appetite

This lecture explores how our cognitions influence when, what, and how much we eat. Different experimental approaches will be described that explore the influences of attention, memory, perception, thoughts and learning on eating behaviour. We will also consider how cognitions may differ in individuals with different eating habits or disorders, how the cognitions play a role in overeating and obesity, and finally how treatment of obesity might directly target the cognitions in question.

Sources of further reading (Sources in bold are available on Study Direct):
Wansink, Brian (2006), Mindless Eating – Why We Eat More Than We Think; Higgs et al. (2012) Learning and memory processes and their role in eating.

Lecture 24: Revision Session

This revision session will provide the opportunity to practice some MCQs and to ask the module organiser for clarification on any of the module content or aspect of the assessment process. The session will also be used as an opportunity to gather more detailed module feedback.