

## **COURSE SPECIFICATION DOCUMENT**

**Academic School:** Communications, Arts and Social Sciences

**Programme:** Psychology

**FHEQ Level:** 6

**Course Title:** Cognitive Science

**Course Code:** PSY 6210

**Course Leader:** Dr Ira Konstantinou

**Student Engagement Hours:** 120

Lectures: 30

Seminar / Tutorials: 15

Independent / Guided Learning: 75

**Semester:** Fall/Spring

**Credits:** 12 UK CATS credits

6 ECTS credits

3 US credits

### **Course Description:**

Cognitive science is an exciting interdisciplinary approach to the mind that draws on research from a variety of disciplines, including philosophy, computer science, linguistics, neuroscience, and psychology. The resulting theories and data have also exerted a profound influence on how philosophers approach fundamental issues about the nature of the mind. This course focuses on such issues, including: Is the mind a computer? How much of the mind is innate and how much is learned? Is the mind a unitary general purpose mechanism, or is it divided into specialized subsystems or modules? How do we represent the world in thought? Are human beings rational?

**Prerequisites:** PSY 4215 Biological Basis of Human Behavior and PSY 4205 Conceptual and Historical Issues in Psychology

### **Aims and Objectives:**

In this course we will first discuss the mind-body debate in psychology and the different schools of thought related to this. Then we will move on to examine the beginnings of cognitive science in the areas of linguistics and artificial intelligence. We will continue with looking at different areas of cognition such as vision, attention, memory, problem solving, consciousness, and emotion. The classes will conclude with an examination of the field of cognitive neuroscience. The course will

shed light to the major findings in these areas. We will also focus on the usefulness and appropriateness of different research methods for the examination of cognitive phenomena. Special emphasis will be placed on the applications of theories through experimentation and the critical evaluation of these.

**Programme Outcomes:**

6Aiii, 6Bi, 6Bii, 6Ci, 6Cii, 6Civ, 6Diii

A detailed list of the programme outcomes are found in the Programme Specification.

This is located at the archive maintained by the Academic Registry and found at: <http://www.richmond.ac.uk/content/academic-schools/academic-registry/program-and-course-specifications.aspx>

By the end of this course, successful students should be able to:

**Learning Outcomes:**

- Develop an understanding of cognitive science as an interdisciplinary field
- Develop an understanding of the formulation of interpretations for the findings of studies in cognitive science
- Appreciate the connections between the theories and their applications in experimentation and to be able to critically evaluate these
- Gain an insight into the ways in which different methodologies are used best when specific phenomena are examined
- Demonstrate the ability to work in a group and independently to answer critical thinking questions on readings, by listening, contributing, leading as is appropriate
- Demonstrate the ability to formulate a line of argument relating to the major studies/theories in this area

**Indicative Content:**

- Philosophy: Mind- Body debate
- Philosophy: Free Will and the Timing of Consciousness
- Linguistics: Language Acquisition
- Linguistics: Language Processing
- Artificial Intelligence: Mind as Machine – Machine as Mind
- Artificial Intelligence: Cognitive Modelling and Robotics

- Cognition: Developmental perspective
- Cognition: Memory and Problem solving
- Cognition: Consciousness and Emotion
- Cognitive Neuroscience: Vision and Attention
- Cognitive Neuroscience: Mental Imagery

**Assessment:**

This course conforms to the Richmond University Standard Assessment Norms approved at Academic Council on June 28, 2012.

**Teaching Methodology:**

The course material will be covered in the following ways:

- I. Lecture presentations with the key concepts
- II. Group discussions on journal articles
- III. Internet sites related to psychology
- IV. Videos and On-line experiments
- V. Intra-net access to lecture notes and reading material

**Bibliography:**

See syllabus for complete reading list.

***IndicativeText(s):***

Eysenck, M.W. & Keane, M. (2010). Cognitive psychology: A Student's handbook. Psychology press.

Farah, M. J. (2000) The Cognitive Neuroscience of Vision. Oxford: Blackwell Publishers.

LeDoux, J. (2003). *The emotional brain: The mysterious underpinnings of emotional life*. (London: Phoenix).

Pinker, S. (1999). *How the mind works*. (London, Penguin Books).

Ramachandran, V.S. (2011). *The Tell-Tale Brain*. (London, William Heinemann)

Wegner, D.M. (2002) The Illusion of conscious will. MIT Press

***Journals***

Cognitive Psychology

Topics in Cognitive Science

Psychological Science

Trends in Cognitive Science

Artificial Intelligence

Connection Science

Nature Reviews Neuroscience

