New College of the Humanities

Minds and Machines Course Descriptor

Course Title	Minds and Machines	Faculty	Philosophy
Course Code	NCHAI750	Course Leader	Dr. Ioannis Votsis
Credit Points	15	Teaching Period	Either
FHEQ Level	Level 7	Date Approved	June 2020
Compulsory/ Optional	Compulsory		
Pre-requisites	None		
Co-requisites	None		

COURSE SUMMARY

This course investigates the ontological, epistemological and methodological dimensions of issues that emerge in relation to systems that exhibit intelligent behaviour, whether these are biological or artificial. Students will learn about the main theories of mind and of the way these theories enrich our understanding and design of intelligent machines. Conversely, students will consider how advances in artificial intelligence seek to throw light on the human mind. In more detail, the course will address questions such as: What is the correct theory of mind? Do mental states reduce to brain states? Does the mind extend beyond the confines of our heads? What is computation? Does the mind compute in a similar way to machines? Under what conditions can we say that a physical system computes? What is intelligence? Is thinking more than mere intelligence? Can we standardise intelligence tests for both machines and humans? Are we also machines of some sort? What can we know about the world around us? Is the universe just a massive computer simulation?

COURSE AIMS

The aim of this course is:

- To develop students' skills in understanding and evaluating the main theories of mind and machines and the relations between them.
- To promote students' ability to interpret, analyse and compare key texts in this area.
- To enable students to form, elaborate and defend their own views in this area.

LEARNING OUTCOMES

On successful completion of the course, students will be able to:

KNOWLEDGE AND UNDERSTANDING

K1d Demonstrate wide-ranging knowledge and systematic understanding of key questions, debates, and theories in philosophy, especially those concerned with relation between minds and machines.

K2d Offer detailed critical engagement with the texts and theories of key figures.

K3d Show a fine grasp of logical structure and truth-preserving patterns of inference in this area.

SUBJECT-SPECIFIC SKILLS

S1d Make original use of advanced scholarly techniques to clarify and situate ideas and arguments, especially in relation to computing, data, and artificial intelligence.

S2d Engage with unfamiliar material at the forefront of philosophy and artificial intelligence, selecting and analysing information, questioning assumptions, and critically evaluating competing methodologies, sources of data and arguments.

S3d Identify and employ a range of philosophical devices to articulate, develop and synthesise alternative positions.

TRANSFERABLE AND PROFESSIONAL SKILLS

T1d Take initiative and personal responsibility; work independently, effectively, and to deadlines.

T2d Respond systematically and creatively to complex, wide-ranging, and unpredictable data, theories, and arguments.

T3d Display self-direction to produce original, sophisticated, clear, and persuasive presentations (written and oral).

T3d Consistently apply an excellent level of technical proficiency in written English, using an advanced application of scholarly terminology, that demonstrates the ability to deal with complex issues both systematically and with sophistication.

TEACHING AND LEARNING

Teaching and learning strategies for this course will include:

- 15 hours of lectures
- One 1-hour one-to-one tutorial
- Independent study

Course information and supplementary materials are available on the College's Virtual Learning Environment (VLE).

Students are required to attend and participate in all timetabled sessions for this course. Students are also expected to manage their directed learning and independent study in support of the course.

EMPLOYABILITY SKILLS

The study of philosophy cultivates skills that are employable across a range of sectors. These include the abilities to:

- Work independently, creatively, and to deadlines.
- Conduct research and explore relevant existing knowledge.
- Analyse, contextualise, and interpret complex ideas and materials.
- Synthesise and evaluate information against a backdrop of uncertainty.
- Solve problems through logical reasoning.
- Present findings and opinions in a clear, structured manner, whether orally or in writing.
- Engage in collaborative and constructive discussion.

ASSESSMENT

FORMATIVE

Students will be formatively assessed during the course by means of one or more set assignments. These do not count towards the end of year results, but will provide students with developmental feedback, both written and oral.

SUMMATIVE

Assessment will be in one form:

AE:	Assessment Activity	Weighting (%)	Online submission	Duration	Length
1	Written assignment	100%	Yes	N/A	4000 words

The written assignment will be assessed in accordance with the assessment aims set out in the Programme Specification.

FEEDBACK

Students will receive feedback in a variety of ways, written and oral, within one-to-one tutorials, in discussion phases of lectures, and on formatively and summatively assessed assignments. Students will also attend the formal meeting, Collections, in which they receive constructive and developmental feedback on their performance.

INDICATIVE READING

Note: Comprehensive and current reading lists for courses are produced annually in the Course Syllabus or other documentation provided to students; the indicative reading list provided below is used as part of the approval/modification process only.

BOOKS

Boden, M. (ed.) (1990) *The Philosophy of Artificial Intelligence*, Oxford: Oxford University Press.

Bostrom, N. (2003) 'Are we Living in a Computer Simulation?', *The Philosophical Quarterly*, vol. 53(211): 243-255.

Bostrom, N. (2014) *Superintelligence*: *Paths, Dangers and Strategies*, Oxford: Oxford University Press.

Clark, A. (2008) *Supersizing the Mind*: *Embodiment, Action, and Cognitive Extension*, New York: Oxford University Press.

Copeland, B. (2000) 'The Turing Test', Minds and Machines, vol. 10 (4):519-539.

Dennett, D. C. (2013) 'The Seven Secrets of Computer Power Revealed', in *Intuition Pumps and other Tools for Thinking*, New York: W. W. Norton & Company.

Egan, F. (2019) 'The Nature and Function of Content in Computational Models', in M. Sprevak and M. Colombo (eds.), *The Routledge Handbook of the Computational Mind*, New York: Routledge, pp. 247–258.

Heil, J. (2004) *Philosophy of Mind*: *A Contemporary Introduction*, London: Routledge.

Putnam, H. (1975) *Mind, Language, and Reality*: *Philosophical Papers*, vol. 2, Cambridge: Cambridge University Press.

Russell, S. and P. Norvig (2009) *Artificial Intelligence*: *A Modern Approach*, 3rd edition, Saddle River, NJ: Prentice Hall.

Searle, J. (1980) 'Minds, Brains, and Programs', *Behavioral and Brain Sciences*, vol. 3: 417–457.

Shanahan, M. (2015) *The Technological Singularity*, Cambridge, MA: MIT Press

Turing, A. M. (1950) 'Computing Machinery and Intelligence', *Mind*, vol. 59, 433-460.

INDICATIVE TOPICS

- General Theories of Mind
- Extended Cognition
- Computationalism
- Human and Machine Intelligence
- The Turing Test
- Transhumanism
- Scepticism and Computer Simulations

Title: NCHAI750 Minds and Machines Course Descriptor **Approved by: Academic Board** **Location: Academic Handbook/Programme specifications and Handbooks/ Postgraduate Programme Specifications/MA Philosophy & Artificial Intelligence Specification/Course Descriptors**					
Version number	Date approved	Date published	Owner	Proposed next review date	Modification (As per AQF4) & category number
2.0	January 2022	May 2022	Brian Ball	April 2025	Category 3: Change to learning outcomes.
1.1	September 2021	September 2021	Brian Ball	April 2025	Category 1: Change to teaching period.
1.0	June 2020	June 2020	Brian Ball	April 2025	