**課 ‧ 程 ‧ 介 ‧紹**

**Course Description**

＊本課程為**哲學系、語言所、心理系及教育所**老師共同開授之**認知科學博士學位學程必修**課程，**全程使用英語授課**，無需特定的背景，歡迎選修；

* **第一次上課時間為109年三月四日（星期三）上午十時十分，地點在文學院412 教室**。

\*This is an **all-English course** co-taught by faculty members from Department of Philosophy, Graduate Institutes of Linguistics, Education, and Department of Psychology. **No** specific backgrounds are required, and all are welcome. This course is also one of the two required courses for the PhD program in Cognitive Sciences at CCU.

\*The first class meeting time will be at **10:10 AM of Wednesday, March 4**, **2020**, and we will meet at **Room 412 of College of Humanities**.

### Introduction to Cognitive Sciences

**(認 知 科 學 導 論)**

**Spring, 2020**

**Credit hours**: 3 **Course code(s)**: **1255202 (哲學研究所)**

**3169001(認知科學博士學位學程)**

**Class hours**: **星期三**（**Wednesdays**）**10:10 AM ~ 1:00 PM**

**Classroom**: **文學院 412**

**Goals:** To introduce graduate students to the fundamental issues of cognitive sciences.

**Description**: This course is designed for graduate students who are interested in gaining general knowledge in cognitive sciences and to understand why it is so important that cognitive science(s) as a discipline to study the mind requires an interdisciplinary approach. **No special background is required, but students from philosophy, linguistics, psychology, education departments, and cogsci program are especially welcome.**

**Main features**: **I**t will be an ***all-English taught*** course.

**T**he course will be co-taught by faculty members from philosophy, linguistics, and psychology.

**Instructors**: 金凱文 (Kevin Kimble) (Philosophy) [kkimble@ccu.edu.tw](mailto:kkimble@ccu.edu.tw) (x31422)

襲充文 (Psychology) ([cwshyi@gmail.com](mailto:cwshyi@gmail.com); [psycws@ccu.edu.tw](mailto:psycws@ccu.edu.tw)) (x32203)

**客座演講(Guest lectures)：**

何德華(Linguistics)、陳欣進(Psychology)、曾玉村(Education)、龔書萍(Foreign Languages) 、游寶達(Computer Science & Engineering)

**Teaching assistant:** (TBA)

**Reading materials:**

General background readings

Stillings, N. A., et al. (1995). *Cognitive science: An introduction*. Cambridge, MA: MIT Press.

Philosophy of Mind

Clark, A. (2013). *Mindware: An introduction to the philosophy of cognitive science.* Second edition. NY: Oxford University Press.

Vision and Neuroscience

Gazzaniga, M.S., Ivry, R., & Mangun, G.R. (2008)[:*The Biology of the Mind*](http://www.amazon.com/Cognitive-Neuroscience-Biology-Mind-Third/dp/0393927954/ref=sr_1_2?ie=UTF8&s=books&qid=1256747926&sr=8-2) Cognitive Neuroscience (3rd ed.).  W.W. Norton, New York,

Marr. D. (1982). *Vision: A computational investigation into the human representation and processing of visual information. San Francisco, CA: Freeman*.

Farah, M. (2000). *Cognitive neuroscience of vision*. UK: Blackwell.

Rosenzweig, M. R., Breedlove, S. M., & Leiman, A. L. (2002). *Biological psychology* (Chapter 10 Vision: From eye to brain). Sunderland, MA: Sinauer Associates.

Palmer, S. E. (1999). *Vision science: Photon to phenomenology.* Cambridge, MA: MIT Press. (Chapters 1, 2, 4)

**Notes**

Other reading materials will also be supplied and assigned by instructors each part and guest lecturers.

**The dates and topics of guest lectures are tentative and may be subject to change.**

**Course Schedule**

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| --- | --- | --- |
| **MM/DD** | **Instructor(s)** | **Topics and Readings** |
| 03/04 | 金凱文(Kimble)  襲充文(Shyi) | Course orientation:  “What is (are) cognitive science(s)?” (Stillings et al. ch. 1) |

**Part I: Philosophy of Mind**

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| --- | --- | --- |
| 03/11 | 金凱文 (Kimble) | Theories of Mind (Clark, Appendix I) |
| 03/18 | 金凱文 (Kimble) | Cognitive Architecture: Computation, Computationalism, and Symbol Systems (Handout and Clark, chapters 1 and 2) |
| 03/25 | 金凱文 (Kimble) | Problems of Mind: Content and Mental Causation (Clark chapter 3) |
| **04/01** |  | **Spring break (\*\* No Class\*\*)** |
| 04/08 | 金凱文 (Kimble) | Cognitive Architecture: Connectionism and Dynamical Systems (Clark, chapter 4) |
| 04/15 | 金凱文 (Kimble) | Problems of Mind: Consciousness (Clark, Appendix II)  **\*\*1st take-home exam\*\*** |

**Part II: Guest Lectures**

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| --- | --- | --- |
| 04/22 | 何德華 | Social and cultural considerations in curriculum design |
| 04/29 | 陳欣進 | Word recognition and Chinese language processing |
| 05/06 | 曾玉村 | When does our mind go beyond information given: Development of Inference during text comprehension |
| 05/13 | 龔書萍 | Language and Culture |
| 05/20 | 游寶達 | Perspectives on AI: Past, Present, and the Future |
| **Note**: For each of the guest lectures, a **2- page summary** of the main theme and findings from the lecture is required as **homework**. (Due date: **05/27/2020**) | | |

**Part III: Brain and Vision Sciences**

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| 05/27 | 襲充文  (Shyi) | Brain and Cognition: Part I (Gazzinga et al., Ch. 3; Stillings et al. ch. 5; RBL, Chap 10) |
| 06/03 | 襲充文  (Shyi) | Brain and Cognition: Part II (Gazzinga et al., Ch. 3; Stillings et al. ch. 5; RBL, Chap 10) |
| 06/10 | 襲充文  (Shyi) | Introduction to Vision Science: Part I (Stillings et al. ch. 12, Farah, 2000, Marr, 1982) |
| 06/17 | 襲充文  (Shyi) | Introduction to Vision Science: Part II (Stillings et al. ch. 12, Farah, 2000, Marr, 1982) |
| 06/24 | 襲充文  (Shyi) | A Computational Approach to Vision Science: Part I (Stillings et al. ch. 12, Farah, 2000; Marr, 1982; Palmer, 1999) |
| 07/01 | 襲充文  (Shyi) | A Computational Approach to Vision Science: Part II (Stillings et al. ch. 12, Farah, 2000; Marr, 1982; Palmer, 1999)  **\*\* 2nd take-home exam\*\*** |

**Grading Policy**

There will three parts in this course, including the guest lectures, and each part, including summaries for guest lectures, will account for **one third** toward your final grade of the course.