

## 112-1 Neuroimmunology (神經免疫學)

**Class Time: 1:10 ~ 3:00 PM, Monday**

**Classroom: Rm 13210 at 生醫卓群大樓**

Instructors: Dr. Chun-Hsien Chu 朱俊憲老師 (Ext. 3592、E-mail: z11108008@email.ncku.edu.tw),  
Dr. Ya-Hsin Hsia(生理所蕭雅心老師), Dr. Yi-Yu Alan Hsu(敏求智慧運算學院徐禕佑老師)

### Course Descriptions /Objective :

The objective of the course for students is to introduce neuroendocrine-immune circuitry from the view of brain immune privilege, neuroendocrine system, brain nerve-driven immunity, innervation of immune system, meningeal lymphatic system, circumventricular organs, barriers and the neurovascular unit of brain, cerebrospinal fluid system, glymphatic system, and the interstitial system in pathophysiological conditions. Students will be able to understand that basic knowledge that the brain interacts with peripheral endocrine and immune system, to maintain physiological homeostasis or progress brain diseases.

### Course Materials:

The Wiley-Blackwell handbook of psychoneuroimmunology / Alexander W. Kusnecov and Hymie Anisman, 2014; An introduction to neuroendocrinology / Michael Wilkinson, Richard E. Brown, 2015; Glia / Ben A. Barres, 2018; Neuron-Glia Interaction in Neuroinflammation, Akio Suzumura / Kazuhiro Ikenaka, 2013; The relevant published materials.

### Grading Criteria:

Student participation and punctuality (70%) and PBL assignment and panel discussion (30%)

### Course Progress Outline

Week	Progress Description	Lecturer
9/04 (一)	Introduction	Chun-Hsien Chu
9/11 (一)	Brain immune privilege	Chun-Hsien Chu
9/18 (一)	Barriers and the neurovascular unit of brain	Chun-Hsien Chu
9/25 (一)	Circumventricular organs	Chun-Hsien Chu
10/02 (一)	Cerebrospinal fluid system	Chun-Hsien Chu
10/16 (一)	Meningeal lymphatic system	Chun-Hsien Chu
10/23 (一)	Interstitial system	Chun-Hsien Chu
10/30 (一)	Glymphatic system	Chun-Hsien Chu
11/06 (一)	Neuroendocrine system	Chun-Hsien Chu
11/13 (一)	Brain nerve-driven immunity	Chun-Hsien Chu
11/20 (一)	Innervation of immune system	Chun-Hsien Chu
11/27 (一)	Neuroimmunology and ageing	Chun-Hsien Chu
12/04 (一)	Neuroimmunology and Alzheimer's Disease	Chun-Hsien Chu
12/11 (一)	Neuroimmunology and Parkinson's disease	Chun-Hsien Chu
12/18 (一)	Neuroimmunology and neuropsychiatric disorders	Chun-Hsien Chu
12/25 (一)	Learning activities: visiting animal behaviour Lab (Dr. Ya-Hsin Hsia, Department of Pharmacology; 3 hours) and artificial intelligence Lab (Dr. Yi-Yu Alan Hsu, Miin Wu School of Computing, NCKU; 3 hours)	Chun-Hsien Chu, Ya-Hsin Hsia, Yi-Yu Alan Hsu

