

科目名	神経細胞生物学		英文表記	Neurochemistry and Cell Biology		2016/3/26	
科目コード	6404				作成		
教員名: Dr. Kei Hirayama 4-10 Lab.							
対象学科/専攻コース			学年	必・選	履修・学修	単位数	授業形態
創造システム工学専攻・生物資源工学コース			専1	選	学修	2単位	講義
科目目標【MGC目標】		The knowledge of the cell biology related to basic biology, can be adapted to their own areas of expertise. Understand the basic structure of the brain and nerve cells responsible for the mind and behavior of the person. To understand the foundation of information transmission in the nerve cells, understand the functional properties of brain and nerve cells. V-E-6, V-E-7, VIII-A・B・C					
総合評価		To evaluate final score, 20% of small exam., 60% of presentation and 20% of reports will be used. To pass this class, 60% or more score will needed.					
科目達成度目標とJABEE目標との対応	目標割合	科目達成度目標(対応するJABEE教育目標)		達成度目標の評価方法	ルーブリック		
					理想的な到達レベル(優)	標準的な到達レベル(良)	最低限必要な到達レベル(可)
	30%	①	The knowledge of biology, bio-chemistry and physiology which learned in undergraduate, strive to deeper learning the professional knowledge. (A-3)	Life sciences in as in expertise to understand the structure and neural information transmission in the brain to assess its expertise by the report and exam.	The structure and neural transmission in the brain to understand as in expertise in life sciences. Also students understand the nural functions for the homeostasis of life.	The structure and neural transmission in the brain to understand as in expertise, students can understand the neural functions for the homeostasis of life.	Understand the structure and neural transmission in the brain as in expertise in life sciences.
	30%	②	To understand brain and nerve are responsible for the mind and behavior of human, students will learn the basic structure of the brain cells. (B-2)	Learn about the special nature of the neural signal transmission by the functions of the nerve cells, it is assessed by the submitted report.	Understands brain and nerve responsible for the mind and behavior of human.The basic structure of the cell to understand, nervous biological diversity.	Understands brain and neuron are responsible for the mind and behavior of human. Also understand the basic structure of the neuronal diversity.	Understands brain and neuron are responsible for the mind and behavior of human.
40%		To understand the mind and behavior of the person, the foundation of information transmission in the nerve cells. (B-2, C-2)	It is evaluated by a presentation by their own initiative in the selected challenge of the functional properties of the cranial nerve.	To understand the mind and behavior of the person, the presentation select proactively theme in order to understand the basis of the transmission of information in the nerve cell. Built a self-management skills.	To understand the mind and behavior of the person, the presentation select proactively theme in order to understand the basis of the transmission of information in the nerve cell.	To understand the mind and behavior of the person, the foundation of information transmission in the nerve cells along the understanding and theme can be a presentation in Japanese.	
本科・専攻科教育目標	1	2	3	4	JABEEプログラム名称	生物資源工学	
		○	◎		JABEEプログラム教育目標	A-3,B-2,C-2	
評価方法と評価項目および関連目標に対する評価割合							
		目標との関連	定期試験	小テスト	レポート	その他(演習課題・実習・実技・成果物等)	総合評価
評価項目			60	20	20	0	100
基礎的理解		①、②	20	20			40
応用力(実践・専門・融合)		③、④	20		10		30
社会的性(プレゼン・コミュニケーション・PBL)							0
主体的・継続的学修意欲		③、④	20		10		30
授業概要、方針、履修上の注意	Give a lecture in English with the inclusion of the Japanese. Lectures are not a one-way, carried out in face-to-face way. You will need to prepare using a reference book literature search with the term listed in course content. Seek an aggressive class participation of advanced curese.						
教科書・教材	From Neuron to Brain (SINAUER), Principles of Neural Science (APPLETON), THE CELL (Garland), Molecular Cell Biology (Scientific American Books) Key word: Motor neuron, Dendrite, Granule cell, Purkinje cell, Axon, Olfactory bulb, Catecholamine, endocannabinoid, Excitatory postsynaptic potential, Pre-synaptic inhibition.						

授 業 計 画

週	授 業 項 目	時間	授 業 内 容	自学自習 (予習・復習) 内容	セルフ チェッ ク
1	An Overall View	2	Structures of the brain. V-E-6, V-E-7		
2	Brain and Behavior	2	Regions of the brain are specialized for different functions. V-E-6, V-E-7	language	
3		2		cognitive functions	
4	Nerve Cells and Behavior	2	The nervous system has two classes of the cells. V-E-6, V-E-7	nerve/glia	
5		2		neuron	
6	Neural Structure and Functions	2	Neural structure and network. V-E-6, V-E-7	dendrite/axon	
7		2		synaps	
8	前期中間試験(行事予定で変更可)	2			
9	Cell and Molecular Biology of the Neuron	2	Synthesis and trafficking of neuronal proteins. V-E-6, V-E-7	autophagy	
10		2		Membran potential. V-E-6, V-E-7	KIF
11	Presentation (Students Lectures)	2	Lecture by students any topics related with brain, neuron or behavior. You will need to prepare the literatures search with the term listed in course content. V-E-6, V-E-7, VIII-A・B・C		
12		2			
13		2			
14		2			
15		2			
期末	期末試験	[2]			
16		2			
17		2			
18		2			
19		2			
20		2			
21		2			
22		2			
23	後期中間試験(行事予定で変更可)	2			
24		2			
25		2			
26		2			
27		2			
28		2			
29		2			
30		2			
期末	期末試験	[2]			
学習時間合計		30	実時間	22.5	
自学自習(予習・復習)内容(学修単位における自学自習時間の保証)				標準的所用時間	
①	For review and preparation			2.0 hrs × 10	
②	For own presentation			5.0 hrs × 6	
③					
備考欄					
<p>This class is a JABEE correspondence courses.</p> <p>・ Main related subjects of this class is Biochemistry (3rd years), Life Sciences (Undergraduate 4th years), Physiology (Undergraduate 4th years), Physiology Lab. (Undergraduate 4th years).</p> <p>(モデルコアカリキュラム)V-E-6, V-E-7, VIII-A・B・C</p> <p>(学位審査基準の要件による分類・適用)A-1</p>					