

2022 Akita University Faculty of Medicine Syllabus

Category	: 基礎医学 IV
Course Title	: Physiology and Pharmacology lab - 生理学実習・生体機能実習・薬理学実習 -
Eligible Students	: grade 2 Related Course
Code	: 71563021
Schedule	: week 28 ~ week 29
Credits	: 2

1. Lead Instructor

Kyoichi Ono (Professor, Department of Cell Physiology, 6069)

2. Instructors

Kyoichi Ono (Professor, Department of Cell Physiology, 6069)

Kota Saito (Professor, 情報制御学・実験治療学講座, 6065)

Tomohiro Numata (Professor, 器官・統合生理学講座, 6272)

3. Course Description Outline(Course Objectives)

生体の機能について理解を深めるため、神経・膜・筋肉からの電気現象の測定、生体からの情報収集について実習する。実習は、以下の6項目からなる。1. カエル坐骨神経の神経活動電位記録 2. カエル骨格筋収縮力記録実習 3. インフォームドコンセント実習 4. マウスの薬物作用機構実習 5. 脳波記録実習 6. 心電図実習
学生全員を6つの班に分け、班ごとに1日1テーマずつ、2週間で6テーマ全てを実習する

In order to deepen the understanding of the functions of living organisms, we will practice measuring electrical phenomena from nerves, membranes, and muscles, and collecting information from living organisms. The training consists of the following 6 items.

1. Nerve action potential recording of the frog sciatic nerve
2. Frog skeletal muscle contraction force recording training
3. Informed consent training
4. Practical training on the mechanism of drug action in mice
5. Measurement of membrane transport using frog skin
6. ECG measurement

Students are divided into six groups, and each group practices one theme a day and all six themes over a period of two weeks.

4. Textbook/Reference Books

スタンフォード神経生物学、カンデル神経科学、人体の正常構造と機能

5. Assessment

Attendance, report

6. Out of Class Study/Message

Sufficient self-study time will be given, so please study the contents of the training thoroughly.

Topics and Contents of class, Course Objectives						
	Class Date	Period	Class Format	Topics and Contents of class, Course Objectives	Instructors	Class Room
1	11 / 14 (Mon)	1-10	Practice	<p>Theme: Orientation</p> <p>Orientation : On the first day, after explaining the grouping and training contents and giving various handouts, each training theme will be demonstrated.</p> <p>In the demonstration, several representatives will be recruited from each group and data will be collected according to the actual training protocol. You should be able to fully master the practical training techniques, handling of equipment and data analysis, as there will be detailed explanations and practical guidance from your academic advisor. On the day of the training, the representative will play a central role in the training. Grouping will be announced on the day.</p> <p>初日は班分けと実習内容についての説明及び諸注意をおこなった後、各実習テーマのデモンストレーションをおこなう。デモンストレーションにおいては、各班から数名ずつ代表者を募り、実際の実習プロトコルにしたがってデータ収集をおこなう。実習の手技、機器の取り扱い、データ解析について指導教官より詳しい説明と実技指導があるので十分習得すること。実習当日はこれら代表者が中心となって実習をおこなう。グループ分けは当日発表する。</p>	Kyoichi Ono Kota Saito Tomohiro Numata	第 2 講義室
2	11 / 15 (Tue)	1-10	Practice	<p>Theme: Practice</p> <p>Each group will practice the first theme. Please note that the training location is different for each theme.</p> <p>Nerve action potential recording – 第 2 実習室 Frog skeletal muscle contraction – 第 2 実習室 Informed consent training – 第 4 実習室 Mouse drug action mechanism – 第 4 実習室 Measurement of membrane transport – 第 2 実習室 ECG – 第 2 実習室、基礎棟 5 階共用室</p> <p>各班ごとに、最初のテーマについて実習をおこなう。テーマごとに実習場所が異なるので注意すること。</p> <p>カエル坐骨神経の神経活動電位記録 : 第 2 実習室 カエル骨格筋収縮力記録実習 : 第 2 実習室 インフォームドコンセント実習 : 第 4 実習室 マウスの薬物作用機構実習 : 第 4 実習室 脳波記録実習 : 第 2 実習室及び 総合研究棟 1 階チュートリアル室 心電図実習 : 第 2 実習室及び 基礎棟 5 階共用室</p>	Kyoichi Ono Kota Saito Tomohiro Numata	To the place specified for each theme
3	11 / 16 (Wed)	1-10	Practice	<p>Theme: Practice</p> <p>Each group will practice on the second theme.</p>	Kyoichi Ono Kota Saito Tomohiro Numata	To the place specified for each theme
4	11 / 17 (Thu)	1-10	Self learning	<p>Theme: Practice</p> <p>Create a report summarizing the experimental results and considerations.</p>		

Topics and Contents of class, Course Objectives						
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5	11 / 18 (Fri)	1-10	Practice	Theme: Practice Each group will practice on the third theme.	Kyoichi Ono Kota Saito Tomohiro Numata	To the place specified for each theme
6	11 / 21 (Mon)	1-10	Practice	Theme: Practice Each group will practice on the fourth theme.	Kyoichi Ono Kota Saito Tomohiro Numata	To the place specified for each theme
7	11 / 22 (Tue)	1-10	Practice	Theme: Practice Each group will practice on the fifth theme.	Kyoichi Ono Kota Saito Tomohiro Numata	To the place specified for each theme
8	11 / 24 (Thu)	1-10	Self learning	Theme: Practice Create a report summarizing the experimental results and considerations.		
9	11 / 25 (Fri)	1-10	Practice	Theme: Practice Each group will practice on the sixth theme.	Kyoichi Ono Kota Saito Tomohiro Numata	To the place specified for each theme