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|--|---|--------------------------------|---|
| <b>Category</b><br>(科目区分)  | Basic subjects  |                                |   |
| <b>Course Title</b><br>(授業科目名)   | Biomolecule quantification technology   |                                |   |
| <b>Instructors</b><br>(担当者名)   | Masamitsu Tanaka  | <b>Academic Year</b><br>(配当年次) | 1   |
| <b>Required Course /<br/>Elective Course</b><br>(必修/選択)  | Elective Cpourse  | <b>Credits</b><br>(単位数)        | 1   |
| <b>Class Format</b><br>(授業形態)  | Remote or Webclass  |                                |   |
| <b>Schedule</b><br>(開講期間)  | Students will be notified by email after completing the course registration.                |                                |   |
| <b>Class Date/Period</b><br>(開講曜日・時間)  | Students will be notified by email after completing the course registration.                |                                |   |
| <b>Course Outline/ Course Objectives</b> (授業の概要・到達目標)  |   |                                |   |
| <p>Purpose of class: The purpose of the lesson is to understand how to quantify various cellular components.<br/> Achievement goal of class: In addition to quantification methods for proteins and nucleic acids that constitute living organisms, the goal is to learn and practice specific quantification methods for biological functional molecules</p>                  |   |                                |   |
| <b>Course Planning</b> (授業計画)  |   |                                |   |
|  | <b>Course Outline/ Course Objectives</b> (授業の概要及び到達目標)<br><b>(Contents of Class)</b> (授業内容) | <b>Instructor</b><br>(担当教員名)   | <b>Department</b> (講座名)<br><b>Class Room</b> [実施場所] |
| 1  | Colorimetric protein quantification   | Professor<br>Masamitsu Tanaka  | Molecukar Medicine and<br>biochemistry              |
| 2  | ELISA principle   |                                |   |
| 3  | Quantitative techniques for determining apoptosis   |                                |   |
| 4  | Quantification of extracellular vesicles  |                                |   |
| 5  | Cytokine quantification technology  |                                |   |
| 6  | Quantitative measurement of nucleic acids (DNA, RNA)  | Lecturer:<br>Daisuke Yasuda    | Immunology  |
| 7  | Principles of RT-qPCR   |                                |   |
| 8  | Quantitative measurement of second messengers<br>(intracellular Ca ions and cAMP)           |                                |   |
| 9  | Quantitative analysis of western blotting images  |                                |   |
| 10   | Quantitative analysis of histological images using Image J                                  |                                |   |
| <b>Grading Criteria</b> (成績評価の基準と方法)   |   |                                |   |
| 30 hours of remote or Web class + 15 hours of self-study, 45 hours in total is counted as 1 credit, attendance status, the results of the oral and written examinations and the contents of the submitted report will be taken into consideration to evaluate.   |   |                                |   |
| <b>Contact Information</b> (問い合わせ先(氏名, メールアドレス等) )   |   |                                |   |
| Name: Masamitsu Tanaka / E-mail: mastanak@med.akita-u.ac.jp<br>Daisuke Yasuda / E-mail: dyasuda@gipc.akita-u.ac.jp   |   |                                |   |
| <b>Comment</b> (その他特記事項)   |   |                                |   |
| Information about the course: If you cannot attend the training due to work, we will adjust the schedule.<br>Textbooks / References: Distribute materials as needed. Alternatively, specify the document.<br>Self-study content during self-study time: It is desirable to carry out preparatory learning according to the goals to be achieved and the content of the lesson. |   |                                |   |