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| Course   | Nutrition, Physiological Regulation and Major Human Diseases   |
| Course No.   | 01ER633  |
| Credits  | 1.5 credits  |
| Grade  | 2 <sup>nd</sup> year   |
| Timetable  | Fall AB  |
| Instructor   | Prof. Jochen Lang、 Prof. Jean-Pierre Savineau、 Associate Prof. Matthieu Raoux  |
| Course Overview  | <p>Major chronic human diseases such as diabetes and cardiovascular pathologies are characterized by interplay between genetic background and life style with an important nutritional component. In the extreme case derangements may lead to the “metabolic syndrome” with consequences on glucose homeostasis and cardiovascular organs. The recent increase in obesity and nutrition-related disease further underscores the necessity to understand the basis of the impact of nutrition/life style on health.</p> <p>This course will provide participants with models of normal and altered nutrition homeostasis and paradigms to study their influence in animal models. The course will focus on nutrition signalling, integration, short-term experimental effects and long-term epidemiology, from the point of view of the whole body, organs and down to the cellular and molecular level.</p> |
| Remarks  | Conducted in English at University of Bordeaux.  |
| Course Type  | Lecture  |
| Link between Course Objectives and Activities          | The students build up expertise on the link between health and food resources by learning the mechanisms of diseases caused by poor nutrition and obesity, such as diabetes and cardiovascular disease, and their precise impacts on health.   |
| Academic Goal  | <p>Students will receive</p> <ul style="list-style-type: none"> <li>- An integrative view how major vital functions are regulated and how set-points are defined in physiological settings and influenced or changed by nutritional status.</li> <li>- Information about experimental and therapeutic approaches as well as molecular effects of nutrients and drugs.</li> <li>- Elementary idea of the genetic landscape that influences the systems</li> </ul>   |
| Course Schedule  | <p>During this course student will learn about:</p> <ul style="list-style-type: none"> <li>◦ Nutrition sensing, energy repartition and homeostasis</li> <li>◦ Basic concepts of molecular, cellular and integrative aspects in nutrition homeostasis and cardiovascular function</li> <li>◦ Current animal and cellular models used in such studies</li> <li>◦ How to read, understand and integrate corresponding research results</li> <li>◦ Explore the field through examples of defined pathologies and molecules which have positive or negative human health benefits as well as therapeutic approaches</li> <li>◦ Analysis of published data</li> <li>◦ Case studies of selected regulatory circuits in health and disease</li> </ul>  |
| Course Prerequisites and Advisories                    |  |
| Grading Philosophy (Percentage/ Criteria/ Methodology) | Each student has to take part in the presentation of one major aspect of the topics discussed, either concerning sensing mechanisms, physiological and pathological adaptation as well as therapeutic intervention (nutritional/drug). Both the clarity and the accuracy of the  |

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栄養・生体制御と主要疾患

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|  | presentations will be quoted. Each student will also have to answer to precise questions from the audience. The accuracy of their answer will be evaluated. |
| Self-Directed Learning Other Than Coursework                     | At home, students will have to prepare a survey of a major topic. They will have to present as a conference to other students.                              |
| Textbooks, References and Supplementary Materials                | None.   |
| Office Hours   | By appointment only.  |
| Other (i.e. Expectations on Classroom, Conduct and Decorum etc.) |   |
| Related Courses  |   |
| Keywords   |   |