Virtual Exchange Program

**BIO-465 Biological modelling of neural networks**

**Start date:** 17/02/2020, **End date:** 29/05/2020  
**Platform:** courseware.epfl.ch

**Ecole Polytechnique Fédérale de Lausanne**

**COURSE SYNOPSIS**

**Domain:** Life sciences  
**Title(s) of the course(s) as it appears on the platform:** Neuronal Dynamics and Computational Neuroscience: Neuronal Dynamics of Cognition  
**Language (ISO-639-1 code):** en  
**Short description of the course:** In this course we study mathematical models of neurons and neuronal networks in the context of biology and establish links to models of cognition.  
**Instructor(s):** Wulfram Gerstner  
**Level:** MA all years  
**ECTS:** 4.0  
**Workload in student hours:** 120  
**Semester:** 1: jan-june


**Prerequisites:** Required courses undergraduate math at the level of electrical engineering or physics majors undergraduate physics. Recommended courses Analysis I-III, linear algebra, probability and statistics For SSV students: Dynamical Systems Theory for Engineers or "Mathematical and Computational Models in Biology" Important concepts to start the course Differential equations, stochastic processes.

**Link to course on platform:** [https://courseware.epfl.ch/courses/course-v1:EPFL+BIO_465.a+2019_1/course/](https://courseware.epfl.ch/courses/course-v1:EPFL+BIO_465.a+2019_1/course/)  
**Link to course in University studyplan:** [http://isa.epfl.ch/imoniteur_ISAP/IGEDPUBLICREPORTS.pdf?ww_i_reportModel=1696552884&ww_i_reportModelXsi=1696552963&ww_i_itemplan=2372843310&ww_c_langue=fr](http://isa.epfl.ch/imoniteur_ISAP/IGEDPUBLICREPORTS.pdf?ww_i_reportModel=1696552884&ww_i_reportModelXsi=1696552963&ww_i_itemplan=2372843310&ww_c_langue=fr)

**Course registration opening date:** 01/02/2020  
**Course registration deadline:** 17/02/2020  
**Course withdraw date:** 04/05/2020  
**Midterm:** Yes  
**Midterm details:** Mini-Project  
**Exam period start:** 14/06/2020  
**Exam period end:** 04/07/2020  
**Exam date:** -
**Exam timing:** Synchronous (exam needs to take place at the same date and time everywhere)

**Exam start time:** -

**Exam end time:** -

**Time zone (at the time of the exam, DST):** UTC+2

**Exam registration date:** 04/05/2020

**Exam resit available:** No

**Exam resit period start:** -

**Exam resit period end:** -

**Exam resit date:** -

**Exam resit time start:** -

**Exam resit time end:** -

**Time zone (at the time of the resit of the exam, DST):** -

**Final exam type:** Written

**Final exam details:** Exam can be on a Saturday. Exam rules: Allowed material: • Bring writing material (Pen, etc.). • Paper will be provided. • You can bring a single A5 (half the size of A4) sheet, handwritten, on which you are allowed write (recto-verso) whatever you think might be useful. • Nothing else. (In particular no books, lecture notes, mobile phones, laptops, calculators, etc.)

**Exam requirements for home university (computer, VOIP, recording materials):** Exam can be on a Saturday. Proctored room necessary

**Cap (maximum number of exchange students):** 10

**Offered to which partenrs:** -, All partners of the Alliance(s) selected above

**Link to course image:** [https://drive.google.com/open?id=1i4C-RNaHuuZMi5bEvhU0AtI0wFQT04Uj](https://drive.google.com/open?id=1i4C-RNaHuuZMi5bEvhU0AtI0wFQT04Uj)