Advanced Methods of Data Analysis and Processing

Subject area: Biology/Biomedical Engineering

University:	CTU
Level:	MA all years
Teaching mode:	online or hybrid
Instructor(s):	Dr. Vaclava Piorecka, Dr. Marek Piorecky, MSc. Jan Strobl

Short description

This course comprehends methods of biosignal data analysis for diagnostics or research purposes. Involved main principles and conditions of using modern spectral analysis methods, direct and inverse task as necessary steps for source localization, and method of semi-automatic and automatic algorithms for classification such as density-based clustering algorithms or artificial neural networks.

Full description

https://predmety.fbmi.cvut.cz/cs/f7ambpmzd

Learning outcomes

Orientation in the field of advanced signal processing and data analysis. Students will have knowledge about the methods and will be able to use them in the practical tasks of biosignal processing and classification.

General information

Contact hours per week:	2 (Range 1h Lecture + 1h Tutorial per week)
Total workload:	75 (in student hours for the whole course)
ECTS credits:	3
Language:	English
Course start date:	19 September 2022

Course end date:	15 January 2023
Add. info about start date:	Start course date refers to start of the semester at CTU. Schedules will be available 1-2 weeks before semester starts. Lectures are taken place from 19.9.2022 until15.1.2023. Examination period from 16.1.2023 until 19.2.2023.
Weekly teaching day/time:	
Time zone:	CET (Denmark, Germany, France, Netherlands, Switzerland, Czech Republic)
Further information:	
Prerequisites:	None
Activities and methods:	Lectures, Tutorial sessions
Presence on campus:	

Final examination

Form:	assignment
Date:	
Location/format:	online
Re-sit possibility:	yes
Transcript available:	end of semester
Add. info/requirements:	Active participation in exercises is mandatory. During the exercises, student will complete scored tasks, 45 points can be obtained from the scored tasks. At the end of the semester, student will write a final test with value of 55 points (written test and practical part). Credit is given if the student obtains at least 50% of the points from the exercise (ECTS grading scale).

Registration

To register for this course, follow the registration requirements of your **home university** as specified here: www.euroteq.eu/courses-registration.

Administration

Number of places:	10
Minimum participants:	-
Internal course code:	F7AMBPMZD

Contact: Vaclava.piorecka@fbmi.cvut.cz

This course is part of the EuroTeQ Engineering University joint course catalogue 2022/2023. This is a collaborative activity of the partner universities DTU, L'X, TU/e, TalTech, CTU, TUM as well as Technion. Students from these universities can participate in the offered courses. It is the responsibility of the student to check if you fulfil the requirements to participate in a specific course. Students are also advised to check with their home institution how to get recognition of the ECTS credits gained in courses of the EuroTeQ course catalogue. For further information about EuroTeQ Engineering University, visit www.euroteq.eu or get in touch with the above-mentioned point of contact.