COURSE DETAIL

NEUROENGINEERING
Country Sweden
Host Institution Lund University
Program(s) Lund University
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Psychology Biological Sciences Bioengineering
UCEAP Course Number 150
UCEAP Course Suffix
UCEAP Official Title NEUROENGINEERING
UCEAP Transcript Title NEUROENGINEERING
UCEAP Quarter Units 6.00
UCEAP Semester Units 4.00

Course Description

This course provides a broad overview of neural engineering concepts and principles for recording outgoing (efferent) and generating ingoing (afferent) neural signals. These concepts form the basis for neural interfaces or human-machine interfaces. This area is interdisciplinary and encompasses the fields of neuroscience, physiology, signal processing, machine learning, and robotics. The course provides insights into existing and future neural interfaces, neural prostheses, and neurorobotics. The course introduces principles and technologies of neuroengineering applications including basic human neurophysiology and -anatomy, brain stimulator, spinal cord stimulation, functional electrical stimulation (FES), neural-machine interface for motor prosthesis control, artificial visual, and auditory devices for augmented sensory perception. Assumed prior knowledge: Mathematics, Physics and Physiology (eg. EXTG50).

Language(s) of Instruction
English

Host Institution Course Number
BMEN30

Host Institution Course Title
NEUROENGINEERING

Host Institution Course Details
https://kurser.lth.se/lot/course-syllabus/25_26/BMEN30

Host Institution Campus
Lund

Host Institution Faculty
Engineering

Host Institution Degree

Host Institution Department

Course Last Reviewed
2025-2026

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