Neuroimaging

This course will provide an overview of neuroimaging tools and an introduction to

analyses of brain imaging data.

The asynchronous online modules focus on:



Module Ø1

Foundations of Neuroimaging

An introduction to the techniques used to study the structure and function of the central nervous system.



Neuroimaging to Probe and Quantify Brain Structure

A review of acquisition, processing, and application of structural neuroimaging data.



Leveraging Functional Neurotechnologies with High Spatial Resolution to Assay Brain Function

A deep-dive into cardiovascular-based neuroimaging technologies that can be used to study functional activity in the brain.







Module 04

Leveraging Functional Neurotechnologies with High Temporal Resolution to Assay Brain Function

A deep-dive into electromagnetic neuroimaging technologies that can analyze fast neural activity and localize its sources.

**** Timeline

Course must be completed in **11 weeks**

Completing course takes approximately

50 hours

🔲 Tech Requirements

Regular access to a computer and a stable internet connection

Compatible internet browser (Google Chrome is recommended)

Google Colab

Prerequisites

Completion of the Neuroscience and Neurotech Primer course

Learning Outcomes

- **1.** Distinguish various neuroimaging modalities and their relative strengths.
- **2.** Use structural brain data to assess and quantify brain structure and health.
- **3.** Describe how functional data with high-spatial resolution is used for spatial localization of brain processes.
- **4.** Describe how high-temporal resolution data is used to assay functional brain networks.

Contact Information

Content and Accommodation Related Questions: neurotech.microcredentials@queensu.ca

Health Sci Ed Connect (HSEC) Technology Support: opdes.elearninghelp@queensu.ca

III Assessments

A pass in this course requires achievement of an overall grade of 70%.







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