Join Radboud Summer School 2017!

Math and Matlab for Neuroscientists

change perspective

Radboud Universiteit

Math and Matlab for Neuroscientists

The purpose of this course is to learn some of the fundamental mathematical and signal-processing theorems that underlie most of the advanced data analysis techniques used in the field of neuroscience and cognitive neuroscience. The focus of this course is on the theory, mathematics, and programming implementations (not on how to use particular toolboxes). The course is designed for people who have a background in biology or psychology and would like to learn some about the mathematics.

Each day will be a mix of lectures and hands-on labwork. In the labwork you will have the opportunity to implement in Matlab the concepts discussed in lecture. Most labwork is done in small groups of 2-3 students. There will be several short quizzes each day to make sure you are learning
the material. There will also be occasional homework assignments to help you consolidate and develop your newly learned skills. Quizzes and homework assignments are not graded and solutions will be provided the following day.

The major topics include: Fourier transform, convolution, wavelets and time-frequency analyses, matrix algebra including least-squares estimation and eigenvalue decomposition (principle components analysis).

You must bring a laptop with Matlab or Octave (a free Matlab-like software) installed. Desktop computers will not be available.

After this course you are able to

- Understand the mechanics of the Fourier transform and how to implement it in Matlab.
- Understand convolution and how to use it to perform time-frequency analyses in Matlab.
- Understand the basics of matrix algebra and how to perform least-squares and eigenvalue decomposition in Matlab

Numer of EC
2 ECTS credits

Entry level
Master, PhD, Postdoc and Professional

Course leader

Michael X Cohen, Assistant professor, Donders Center for Neuroscience, Radboud University

## This course is designed for

PhD students and postdocs who have experience with data analysis but who feel that they need more training in the fundamentals. Beginner-level experience with Matlab programming is necessary. The course focuses heavily on analog signals (LFP/EEG/MEG).

Admission documents

- Motivation letter
- CV

Dates

Monday 14 August - Friday 18 August 2017
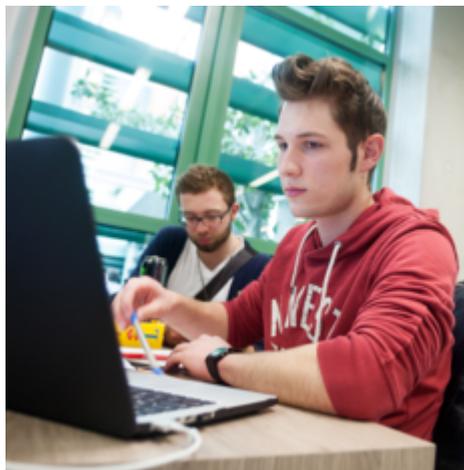
Course fee

€ 500

Discounts

- 10% discount if you register before April 1, 2017.
- 15% additional partner-discount for students from partners universities on all course fees! See website for complete partner list!

Want to be part of the RSS experience?

More than just a course!

Radboud Summer School is more than an academic event. It is a unique opportunity to meet other international students and researchers and to get to know Radboud University and the city of Nijmegen. Our participants come from all over the world and have different cultural and academic backgrounds. Our programme includes the following activities free of charge: welcome reception, sports activity, guest lecture and farewell drink. We offer also a BBQ, River Cruise, City Tour, Pub quiz and excursion for a small fee

A SMART WAY TO SPEND YOUR SUMMER.

Have a look at what participants had to say about their experience!

And do not forget to register now!

Deadline application

June 1, 2017

Contact
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www.ru.nl/radboudsummerschool, August 6-18 2017