

## PHYS 411 Time Series Analysis

Instructor: Johannes Gemmrich

[Gemmrich@uvic.ca](mailto:Gemmrich@uvic.ca)

Phone 250-509-1490, Bob Wright Building A403a

Available for discussion after the lectures, or by appointment

Course information (please check regularly!):

<http://web.uvic.ca/~gemmrich/PHYS411/>

Grading:

Assignments (~7): 50%

Term project: 35%

Midterm exam: 15%

Late hand in (without previous discussion with me): -10%/day

Text book: The course does not follow a specific textbook. Suggestions for text books are listed on the course web page.

Material on the course web page

Course outline:

- 1) Introduction to time series analysis
- 2) Univariate / bivariate statistics
- 3) Random data
- 4) Fourier series, Fourier transform
- 5) Power spectra estimation
- 6) Data filtering
- 7) Data interpolation, gridding
- 8) Selected topics:
  - Principal component analysis
  - Wavelets
  - Empirical Mode decomposition