



## [Research Methodology]

**Course level:** Master ([M1])

**Track(s):** [MLDM, DSC (M2)]

**ECTS Credits:** 2

**Course instructors:** [Emilie Morvant]

**Education period:** [1st] semester **Language of instruction:** English

**Expected prior-knowledge:** [basics in machine learning and data mining]

**Aim and learning outcomes:** This course aims at presenting what is research in machine learning and data mining. Moreover, it gives tools to be able to present a contribution either through writing or through a talk.

**Keywords:** [Research, Scientific Communication, LaTeX, Beamer]

### Syllabus:

- What is research?
  - o How to become a researcher?
  - o How to do research?
    - Steps in research process
    - Evaluation of the research (the publication principle, etc.)
    - Ethics in research
- How to write a scientific paper?
  - o Organization of a paper
  - o Making use of LaTeX (and bibtex)
- How to present a scientific contribution?
  - From understanding a paper to the presentation of it

**Organisation and timetable :** [Volume CM/TD/TP] 10h of lectures – 10h Practical Sessions to prepare a presentation of a scientific article (*NB: can change depending on the number of students*)

**Form(s) of Assessment:** Preparation of a summary (LaTeX) and presentation (beamer) of a scientific article

### Literature and study materials:

- The researcher's article: a three-part adventure:  
<https://www.youtube.com/watch?v=K4qY8WvgZOw>  
a movie directed by Charlotte Arene in collaboration with the "Physics Reimagined team of LPS (Université Paris Sud and CNRS)

## Master in Computer Science

- The data scientist's guide for writing papers by Nikolaj Tatti from Department of Computer Science, Aalto University (Finland):  
<https://users.ics.aalto.fi/ntatti/howtowrite2016/>

### **Additional information/Contacts:**

emilie.morvant@univ-st-etienne.fr