CH-349

Experimental physical chemistry

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Cursus	Sem.	Type
Chemical Engineering	BA6	Obl.
Chemistry	BA6	Obl.

Language of teaching	English
Credits	4
Withdrawal	Unauthorized
Session	Summer
Semester	Spring
Exam	During the semester
Workload	120h
Weeks	14
Hours	**4 weekly**
Project	4 weekly
Number of positions	

It is not allowed to withdraw from this subject after the registration deadline.

Summary

Experiments related to physical chemistry courses.

Content

The goal of this practical course is twofold.

First, it is intended to give you the opportunity to learn the principles and practice of a series of physical measurement techniques for chemistry and chemical engineering. You will learn how to measure physical properties in a laboratory. At the same time, you will also learn to operate the equipment used for these measurements. You will then link the measurements to the underlying theory, and the properties of the systems under investigation.

Second, the course is structured as an inquiry based-lab.
The course will be structured around two challenges. For each challenge you will work in teams of two to:

- Develop scientific questions, and formulate hypotheses
- Explore, design and conduct investigations (collect data)
- Make conclusions based on the data, including references
- Critically assess the conclusions, and address the hypotheses
- Present the findings

Admission is conditional on successful completion of courses previously followed (2 courses from a list of 3 must be acquired):
- PHYS-201(e) General physics: electromagnetism (Bloc 2)
- CH-242(b) Statistical thermodynamics (Bloc 2)
- CH-314 Structural analysis (Bloc 4, 3ème année)

Learning Outcomes

By the end of the course, the student must be able to:

- Develop scientific questions
- Formulate hypotheses
- Design experiments
- Conduct investigations

- Assess / Evaluate experimental data
- Work out / Determine results
- Make conclusions
- Present the overall project

Transversal skills

- Write a scientific or technical report.
- Access and evaluate appropriate sources of information.
- Collect data.
- Use a work methodology appropriate to the task.
- Take feedback (critique) and respond in an appropriate manner.
- Keep appropriate documentation for group meetings.
- Plan and carry out activities in a way which makes optimal use of available time and other resources.
- Set objectives and design an action plan to reach those objectives.
- Demonstrate the capacity for critical thinking

Assessment methods

Evaluation of the individual experiments performed during the semester, and evaluation of the overall report written for each challenge.

Resources

Moodle Link

- https://go.epfl.ch/CH-349