# ReadMe first! - Batteries, fuel cells and electrolysis

Module 6, Batteries, fuel cells and electrolysis, within the TRACKS’ course Modern Energy Technologies and Systems. Lecturer:

General information

The course is taught in English. This module consists of:

**Asynchronous work**

* 8 Videos, in total 2h+47 min (compulsory, no points).
* 3 Quizzes, in total 30 questions (30 points).

**Synchronous work**

* Write and upload “Project topic” (5 points).
* Write and upload “Project update” (5 points)
* Write and upload “key concepts” (30 points).
* Write and upload “Project report” (30 points).
* Present project plan, project work and project outcome in class.

**How to pass this module**

To pass the module you need to attend at least 2 of the 3 Fridays (in total 8 of 12 hours in the classroom). To compensate for missed in-class sessions and/or to get some points for missed assignments, you will be offered to carry out separate special assignments. For all compensating tasks, due is three days before the next course module starts., i.e. You will not be able to start the next module until you have passed this module, and it is strongly recommended that you collect points.

Timeplan for this module, including schedule for classroom-days

This module is run over four weeks, where the asynchronous parts start 29 September. There are several videos and quizzes prepared for you, of which we expect you to finish the majority before we meet in person, the first session is Thursday October 5, see more below.

Below, you can see what is expected regarding your asynchronous work as well as what is planned for the three in-class sessions (time: 13-17):

**Before October 5**

*Asynchronous work*

Watch the following videos and take the corresponding quiz (Quiz Part I).

* I. 1. Introduction to electrochemistry - video 12 min
* I. 2. Thermodynamics, electrode potential, and cell voltage - video 23 min
* I. 3. Batteries, Fuel cells, and Electrolyzers - video 17 min

**October 5 (Synchronous activities – Day 1 in classroom)**

13:15           - Information about the module’s aim and content.

- Discussions, Q&A from the asynchronous work.

14:15          - Form groups.

- Group work, formulate project topics and define project goals.

15:15 - Hands-on electrochemistry lab I.

16:15 - Presentations of project topics and goals.

**Before 13 October**

*Asynchronous work*

Watch the following videos and take the corresponding quiz (Quiz Part II).

* II. 1. Batteries - video 29 min
* II. 2. Fuel cells - video 22 min
* II. 3. Electrolyzers - video 23 min

**13 October (Synchronous activities – Day 2 in classroom)**

13:15 - Discussions, Q&A from the asynchronous work.

14:15 - Group work, project update.

15:15 - Hands-on electrochemistry lab II.

16:15 - Presentations of project update.

**Before 20 October**

*Asyncronous work*

Watch the following videos and take the corresponding quiz (Quiz Part III).

* III. 1. Efficiency of electrochemical energy conversion - video 21 min
* III. 2. Roles and possibilities of electrochemical energy conversion in a sustainable energy system - video 20 min

**20 October (Synchronous activities – Day 3 in classroom)**

13:15          - Discussions, Q&A from the asynchronous work.

14:15          - Project presentations (10 minutes per group).

15:15          - Reflections and discussion on the project work. What did we learn? What was most surprising?

16:15 - Individual work, wrap up “key concepts”.

- Reflections and discussion on what did we learn in this course module.

Welcome to this course module.