Fuel cells offer an efficient way to convert chemical energy in a fuel, such as hydrogen, to electricity and has the potential to become a cornerstone in a future sustainable energy system. Fuel cell technology is particularly interesting for transport applications, for example in cars, trucks, busses, boats and even airplanes, but also for stationary applications, back-up power and portable electronics. A fuel cell running on hydrogen and air has water as the only exhaust and, thus, can contribute to a better environment both locally and globally.

The fuel cell system is complex and everything from the details of the fuel cell components, to how the fuel cell is operated and controlled to how the hydrogen fuel is produced, distributed, and stored needs to be optimized for fuel cells to become a viable option for energy conversion. In this course, you will get an introduction to the critical components in the fuel cell as well as to the system around the fuel cell, how they function and how to control them.

The course will start in January 2022 and run during study period 3. We will have four full days of lectures and seminars and a visit to the company Power Cell AB during the course. It is desirable that all students participate in person at these occasions, but lectures will also be recorded and uploaded to the course Canvas page. Students from all master’s programs are welcome to apply to the course. To get a good balance between student background and number of students we may need to do a selection.

Students will also perform a project work in group related to fuel cell systems. There are projects available at several departments at Chalmers with researchers active in many different aspects of fuel cell systems, both practical and theoretical. Students will also work independently on questions and problems related to the lectures and course literature.

To enroll in the course, send an application to: Associate Professor Björn Wickman
E-mail: bjorn.wickman@chalmers.se

no later than November 30th. The application should contain a one-page (maximum) motivation letter explaining why you want to enroll in the course and should contain information about your background, bachelor, and master’s programs together with your course transcripts.

Björn Wickman (F), David Sedarsky (M2), Torbjörn Thiringer (E2), Anna Martinelli (K), Maria Grahn (M2), Selma Brynolf (M2), Lisa Göransson (SEE), Anders Palmqvist (K), Dario Maggiolo (M2), Jan Froitzheim (K), David Steen (E2)