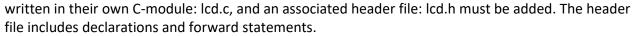# Assignment 3 – A digital clock

1) Mount the LCD display on the EMP board (when you get access to it)

2) Write some general functions, which perform generic operations at the display. E.g.: ClearDisplay, SetCursor, Write a character at cursor position, Print a string, etc.
To make the generic functions re-usable they must be written in their own C-module: lcd.c, and an associated header file: lcd.h must be added. The header file includes declarations and forward statements.
Read about the display and its commands in the datasheet, which can be found in itslearning -> Resources -> datasheets -> EMP board.

3) Design a clock, which prints out the hours and the minutes at the LCD display in the format: hh:mm. Use the button functionality from assignment 1 to set the right time at the clock. A single press at <SW1> will count the minutes up or down. A double press will change the direction (up/down) and a long press will make the clock run. When time is running, the ':' character will flash every second, of course.

The solution must contain a task diagram, a list of modules and relevant state machine diagrams.
*** NOTICE ***
Think in tasks and inter task communication! A LCD-task, a real time clock task, a user interface task etc.

Good luck,

Oskar