The course has an open laboratory format. Groups of 1 to 4 students propose a project of their choosing (with the approval of the instructor). The project must be a digital system or a digitally-controlled system. The students design, build, test and document their hardware, and write, debug and document the corresponding software. Most projects include schematic capture, printed circuit board design and manufacture, use of scopes and logic analyzers, software development tools, in-circuit debugging, and so forth. Students will learn to use an ARM Cortex M0 microprocessor, around which they will build their project. Students must identify the appropriate hardware peripheral chips (with appropriate current ratings, speed, environmental ratings, and cost) that are required for their project besides the provided ARM processor. The ECE Electronics Services Shop, ECE Supply Center, and ECE Machine Shop are available to the students.

The ADSL has a strong community atmosphere; students provide help and encouragement to each other, in addition to the support provided by the TAs and instructor.

Students will demonstrate their projects at the ADSL Open House at the end of the semester. This event is open to the public, and constitutes the majority of the grade in the course. Students are also encouraged to show their work at Engineering Open House. A final report is due during finals week. The final report must include all information necessary to allow future students to further develop the project.

Students may wish to undertake projects that take more than one semester, with consent of instructor. Additional semester(s) of projects in ADSL will be approved based on the performance in the previous semester. In exceptional cases work in ADSL may develop into graduate thesis projects or graduate independent study projects. With consent of instructor, students may work in ADSL when registered in ECE 395, ECE 396, ECE 397, ECE 597, or ECE 599.

Our meeting for this semester is: **Tuesday at 4:00 PM in 2076 ECE Building (ADSL Lab)**

### Instructor

Prof. Lippold Haken  
Office: 3054 ECEB  
Email: L-Haken@illinois.edu

### Teaching Assistants

Graduate TA: Anil Agarwal (aragarw2@illinois.edu)  
Undergraduate TA: Miguel Torres (miguelt2@illinois.edu)

### Course Policies

The course policies are applicable to all ADSL students, regardless of registration in ECE 395/396 /397/597/599.

### Weekly Hours Requirement

You must log at least 6 hours (for 2 credit hours) or 9 hours (for 3 credit hours) in the lab every week! You are welcome to do homework in the lab or just hang out, but only time spent working on the ADSL project should be logged on the time-sheet. Be interested and supportive of other people in the lab; think of ADSL as a “forced vacation” from your other school activities each week.

Students not meeting the minimum requirement will be given one warning. Thereafter, each week of insufficient hours will affect the student's grade.

### Attendance

Attending the weekly 4 PM meetings is absolutely mandatory, no exceptions will be made. These meetings also count towards the weekly hour requirement. During the weeks when there are no lab
exercises or demos scheduled, TAs will be checking on the weekly progress of all groups. This is also an opportunity for students to ask TAs for assistance with challenges encountered while working on the project.

**Lab Space Usage**

Each group will be assigned one lab bench for their use for the entire semester. Never borrow chips, test equipment, cables, etc. connected to other projects in the lab (please report any such problems; there will be serious consequences). If you need anything (ARM chips, cables, etc.) in addition to what you are given at the beginning of the semester, please contact the TA.

**Lab Access**

Only students with card access are permitted in the lab; please do not open the door for others-- this is essential for ensuring that your projects are safe and parts do not go missing. All ADSL students will have card access to the lab. If you are registered but do not have access within the first week, please email the instructor and TAs.

**First Week and Subsequent Exercises**

In the first week of the semester, decide on weekly lab times with your lab team. Upload your project proposals on the course website under "Spring 2019 Projects", along with names and netIDs of all team members, goals for each round of demos, and your weekly lab times.

For the schedule of weekly lab exercises and assignments, please see Spring 2019 Schedule.

**Grading**

Grades will be determined based on meeting the weekly hour requirement, completing lab exercises on time, attendance, effort, progress throughout the semester and the final report.