The course teaches fundamentals and advanced topics of operating system engineering. Students will implement, from scratch, a minimalistic (yet fully functional) operating system that supports virtual memory, kernel and user modes, system calls, threads, context switches, interrupts, interprocess communication, coordination of concurrent activities, file system I/O, and networking. Students will further learn advanced topics from the forefront of operating systems research, and they will implement some of these in the final project.

The course workload consists of one short quiz and six practical exercises, culminating in a project which will be presented by the students in class (all assignments will be finished before the exams period; work is done in pairs).

For undergraduate students: the course fulfills the project requirement.

**Academic credit points:** 4

**Staff:**
- Lecturer: Dan Tsafrir (dan@cs)
- TAs: Igor Smolyar (igors@cs)

**Prerequisites:**
- CS: 234123 (operating systems), or
- EE: 046209 (structure of operating systems) and preferably 046210 (lab in operating systems)