

ES6153: Embedded Operating Systems

AUs: 3

Prerequisites: NIL (an undergraduate OS course would be an advantage)

Semester 2

The Operating System (OS) is one of the most important middleware components that abstracts the underlying hardware and presents a simplified interface to the software application. In embedded systems such as smartphones, automotive, and avionics, the OS also presents a simplified interface to the multitude of sensors and actuators that these systems interact with. Such systems are highly resource-constrained however, and therefore the OS must be efficient in processor and memory usage. Additionally, the OS must also support real-time scheduling, to provide service guarantees on systems' timing constraints. In this course the students will learn various concepts in Real-Time Operating Systems (RTOS), and also get exposure to real-world case studies. The course project will provide students with hands-on experience in benchmarking performance as well as modifying functionality of the commercial Micrium/OS-III RTOS.