Meeting times: Tu Th 10:00 - 11:20. Location: Umrah 140.

Instructor: Sanjoy Baruah (baruah@wustl.edu). Office: Jolley 404. Office Hours: TuTh 11:20 - 12:30, or by appointment

Course Description: Cyber-physical systems (CPS) integrate computational and physical processes: embedded computers interact with physical devices through sensors and actuators, often via a communication network. This course will explore some recent and on-going research that aims to enable the development of safety-critical cyber-physical systems in a manner that is both provably correct and resource-efficient. No prior exposure to CPS computing is required; familiarity with basic algorithmic concepts will be assumed.

Prerequisites: CSE 347 (Analysis of Algorithms) or equivalent.

Text: There are no required texts; we will study a series of papers, copies of which will be made available.

Graded components:

- Several homework assignments.
- Two mid-term exams. The first will be administered in class; the second will be a take-home one.
- A class project. Each student must complete a class project. You are responsible for defining your own project in consultation with the instructor. Your project can be either an experimental investigation or a survey or research paper. It is fine to use research from an RA position as the basis for your class project (with the permission of your RA supervisor). Two-person projects may be permitted, provided the total work involved is about twice that of the typical single-person project. Some or all of the projects may require a short (15-minute) presentation to the class.
- Although attendance will generally not be recorded, it is expected that each student will attend most class meetings.

Grading criteria: The breakup of grades is tentatively set as follows

- Several homework assignments: 25%
- Mid-term exams: (20 + 30 =) 50%
- Class project: 25%