

## *Software Architectures*

**Instructor:** Dr. K. Suzanne Barber

**Course Description:** This course will teach students

- The importance of software architectures,
- The different types of software architectures and associated purposes for these respective types of architectures,
- Methods for deriving and specifying architecture models, and
- Methods for analyzing software architectures for properties such as liveness, safety, performance, and adherence to a range of requirements.

The course will teach students about software architectures, architectural model specification techniques and analysis techniques offered by the research community as well as those architectures, model specifications and analytical methods commonly used in industry.

**Syllabus:** Students will be taught to: (1) knowledge concerning the state-of-the-art and state-of-the-practice for software architectural model types, specification methods and analysis techniques and (2) to apply fundamental knowledge about software architecture demonstrating they know when to use a respective software architecture type, how to derive and specify the respective architecture and how to best leverage the architectural model to insure development, testing, maintenance and system evolution efforts remain on target.