Software architecture is an increasingly important industry practice and research area within the software engineering community. Software architecture as a discipline is gaining an ever increasing prominence as software intensive systems have become a critical and indispensible component of most companies and business activities across all industries. As software systems become ever more sophisticated, complex and interconnected, applying well-understood and rigorous software architecture methods, practices and techniques is no longer optional or desirable, but necessary and required for most if not all software implementations. Solid software architecture can be traced to be at the heart of most well-engineered and successful software system. This course teaches the software architecture theory, practice and tools used by the premier software companies and IT departments across the industry.

If you enjoy learning and experimenting with software techniques and tools – be ready to have fun!

The course includes theoretical learning and hands-on experimentation and projects. Upon the successful conclusion of the course, the student will be able to:

- Understand the theory and motivation of modern approaches to software architecture
- Analyze, assess, and evaluate the appropriateness of the software architecture of a software intensive system; assess system conformance to the software architecture
- Elicit, capture, and formally document architectural requirements and quality attributes
- Analyze, define and document the appropriate software architecture for a software intensive system based on architectural requirements, constraints, and quality attributes
- Incorporate cost benefit analysis methodology, as well as financial, organizational, and business context considerations in analyzing and defining software architectures
- Use modern tools to support and implement software architecture.

**Textbooks:**

“Software Architecture: Foundations, Theory, and Practice”,
by Richard N. Taylor, Nenad Medvidovic, Eric Dashofy

“Software Architecture in Practice”, by Len Bass, Paul Clements, Rick Kazman