The increasing size of hardware designs has necessitated the use of ever increasing levels of Computer-Aided Design tools, synthesizing designs from ever higher levels of specification abstraction. While logic synthesis tools have already been established as an integral part of the design flow, architectural synthesis methodologies are making increasing inroads in the semiconductor industry. This course will provide an introduction to the main synthesis methodologies in hardware design, namely, logic synthesis, and architectural synthesis. Additionally, the size and complexity of systems-on-a-chip has placed embedded systems and hardware-software codesign methodologies centerstage in Computer-Aided Design. The course will furthermore provide an introduction to embedded systems research and will cover a selection of prominent recent research papers in the embedded systems area.

The following is the main course textbook:


The following three books are recommended:


The course meets twice a week on Mondays and Wednesdays, 2:00 to 3:20 PM in EBU3B 2154.