数字电路分析与设计课程介绍

一、中文简介：

     本课程分理论环节和实验环节两部分。理论部分介绍数字电路的基本概念，组合逻辑电路的设计，时序逻辑电路的分析与设计，以及数模混合电路的分析等。根据教学特点，理论教学采用"自底至上（DWON TO TOP）"的讲授方式，首先从单元电路的设计入手，介绍经典单元电路（中规模集成电路）的设计方法，然后应用各种单元电路组合成复杂电路或完整的数字系统。实验环节包含中规模数字集成电路的功能测试，应用中规模数字集成电路设计具有某一特定功能的单元逻辑电路，以及应用 EDA 工具进行数字系统的综合设计等内容。

二、英文简介：

    This course includes two parts: theory part and experiment part. The theory part introduces Combination Circuit Design, Sequential Logical Circuit Design, and Mixed-signal Circuit Analysis, etc. According to the teaching characteristics, theory teaching takes " DOWN TO TOP" teaching mode. It starts with unit circuit design and the design method of classical unit circuit (medium scale integrated circuit). Then complex circuits or digital systems combined with all sorts of unit circuits are introduced. Experiment teaching includes designing unit digital logic circuit and the digital clock circuit with midium scale digital integrated circuit, and the design of comprehensive digital system with EDA tools.