

The Hong Kong University of Science and Technology

UG Course Syllabus

FPGA based Design: From Theory to Practice

ELEC4320

3 Credits

Pre-requisites: ELEC 2350 or ELEC 3310

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Course Description

This course introduces the basic theory and design skills for FPGA-based design. The course aims to equip the students with knowledge and skills for real-world digital system design using FPGA devices. Major topics include an introduction to reconfigurable computing, Verilog hardware description language, FPGA device architecture, mapping flow, and some case studies for the practical system design. Students are expected to gain hands-on experiences in a complete FPGA-based design cycle, from design specification, synthesis, implementation and simulation in this course.

Assessments:

Assessment Task	Contribution to Overall Course grade (%)
Homework	20%
Lab	20%
Midterm Examination	30%
Term Project	30%

Required Texts and Materials

No specific Textbook, mainly based on course slides. Additional tutorial and reading materials will be provided.