# 國立台灣科技大學 114學年 第2學期　課程大綱

## Spring 2026 NTUST Course Outline

授課教師：林昌鴻

Instructor:Chang Hong Lin

課程名稱：數位邏輯設計實習

Course Title：Lab. of Digital Logic Design

2026/11/4

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| 課程代號： ET3806303<br>Course Code<br>學分數： 1<br>Credits | 必選修：必修/半學年<br>Required/Electve:Required/Half Yr.<br>先修課程：<br>Prerequisites |
| 節次教室： F6(T2-511) F7(T2-511) F8(T2-511)<br>Time/Location | |
| 專業核心能力：<br>Core Professional Competencies | |
| 課程網址：<br>Course Website | |
| 課程宗旨：<br>Course Objectives | 1.示波器及邏輯分析儀之操作與使用 2.PLD發展系統之操作與使用 3.Verilog HDL模擬器之操作與使用 4.Code Converter、Adder-subtractor、Counter及SRAM等數位電路之實作 5.Code Converter、Adder-subtractor、Counter及SRAM等數位電路之Verilog HDL模擬 6.Code Converter、Adder-subtractor、Counter、SRAM及Binary Multiplier等數位電路之PLD設計//1.Introduction to TTL series IC and basic electronic devices.<br>2.Use basic equipments for digital design: Oscilloscope, Function generator, Multi-meter, Logic Analyzer and Power supply etc.. )<br><br>3.Use and introduction to basic tools for digital design: MAX+PLUS II, Quartus II, KeilC and ModelSim etc.. )<br><br>4.Using ABEL to design digital circuit application for PALs.)<br><br>5.Using Verilog HDL to design digital circuit application for CPLD/FPGA.)<br><br>6.Using Microcontroller to design digital circuit application.) |
| 課程大綱：<br>Outline of Lectures | 1.示波器及邏輯分析儀之操作與使用 2.PLD發展系統之操作與使用 3.Verilog HDL模擬器之操作與使用 4.Code Converter、Adder-subtractor、Counter及SRAM等數位電路之實作 5.Code Converter、Adder-subtractor、Counter及SRAM等數位電路之Verilog HDL模擬 6.Code Converter、Adder-subtractor、Counter、SRAM及Binary Multiplier等數位電路之PLD設計//1.Introduction to TTL series IC and basic electronic devices.<br>2.Use basic equipments for digital design: Oscilloscope, Function generator, Multi-meter, Logic Analyzer and Power supply etc.. )<br><br>3.Use and introduction to basic tools for digital design: MAX+PLUS II, Quartus II, KeilC and ModelSim etc.. )<br><br>4.Using ABEL to design digital circuit application for PALs.)<br><br>5.Using Verilog HDL to design digital circuit application for CPLD/FPGA.)<br><br>6.Using Microcontroller to design digital circuit application.) |

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| 授課方式：<br>Method of Instruction | 講授 Lecture：10%<br>分組討論 Group discussion：0%<br>案例研討 Case study：0%<br>操做練習 Practical exercises：90%<br>講授 Lecture：% |
| 教科書：<br>Textbooks | Digital Design with An Introduction to the Verilog HDL, VHDL, and System Verilog, 6th edition, by M. Mano and Michael Cilieei, Pearson, 2019. |
| 參考書目：<br>References | Digital design and computer architecture, 2nd edition, by D. Harris and S. Harris.<br>Digital design with RTL Design, VHDL, and Verilog, 2nd edition, by F. Vahid. |
| 修課須知：<br>Notice | nil |
| 評量方式：<br>Grading | nil |
| 備註說明：<br>Notes | nil |