# Introduction to Electronic Design Automation (EE4026)

Time / Location: Monday 13:00-14:50 (E1-107), Wednesday 13:00-13:50 (E1-112)

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Office Hours: Wednesday 14:00-15:00; other time by appointment only.

## **Teaching Assistant:**

- 許元亨, office: E1-359 (ext:34577), Email: <u>hihihihi81921@gmail.com</u>
- 蔡季軒, office: E1-359 (ext:34577), Email: <u>andy840728@gmail.com</u>

Prerequisites: intro. to logic design (required), data structures, intro. to VLSI (suggested)

## **Reference Books:**

- 1. L.-T. Wang, Y.-W. Chang, and K.-T. Cheng, "Electronic Design Automation: Synthesis, Verification, and Testing", Elsevier/Morgan Kaufmann, 2009.
- 2. S. H. Gerez, "Algorithms for VLSI Design Automation", John Wiley, 1999.
- 3. Giovanni De Micheli, "Synthesis and Optimization of Digital Circuits", McGraw-Hill, 1994.

Other Reference: indicated in each unit

## **Course Contents:**

- Introduction to electronic design automation (6 hrs)
- Basic data structures and algorithms (3 hrs)
- Physical design: (15 hrs) partitioning, floorplanning, placement, routing
- Binary decision diagram (3 hrs)
- Logic synthesis (6 hrs)
- Testing (12 hrs)

### **Grading:**

Homework: 15% Midterm: 30% Final Exam: 35% Final Project+Demo: 20%

**Homework:** Students may discuss the homework problems with one another but must write up their solutions separately. Late homeworks will incur a penalty of 20 percent of the total score per day for the first three days (Saturdays and Sundays included) and will not be accepted afterwards.

**On-Line Resources:** Lecture notes are available at LMS system (<u>https://lms.ncu.edu.tw</u>). Other course-related information are available at <u>http://www.ee.ncu.edu.tw/~jimmy/courses/EDA18</u>. On-line learning videos are also available at <u>http://eda.ee.ncu.edu.tw/EDA\_WEB</u>.

**Academic Honesty:** Cheating is very uncivilized behavior and is to be avoided at all cost. Oral discussion about homeworks is not considered cheating. Copying someone else's homeworks / tests or part of a homework / test is cheating. If cheating is discovered, all students involved will receive no credit for the homework / test and possibly get an F grade for the course.