Course: ENGG2020  
Course ID: 003617  
Eff Date: 2022-07-01  
Crse Status: Active  
Apprv. Status: Approved

Digital Logic and Systems 數位邏輯及數字系統

This course introduces the digital concepts; number systems; operations and codes; logic gates; Boolean algebra and logic simplification; combinational logic; functions of combinational logic; flip-flops and related devices; counters; finite state machines; programmable logic devices - programming and sequential logic applications; memory and storage; integrated circuit technologies.

本科介紹數位概念：數字系統；運算及編碼；邏輯門；布爾代數及邏輯簡化；組合邏輯；組合邏輯函數；觸發器及相關器件；計數器；有限狀態的時序機；可編程邏輯器件—編程及序列邏輯應用；記憶及存儲；集成電路技術。

Grade Descriptor:

A

EXCELLENT - exceptionally good performance and far exceeding expectation in all or most of the course learning outcomes; demonstration of superior understanding of the subject matter, the ability to analyze problems and apply extensive knowledge, and skillful use of concepts and materials to derive proper solutions.

有關等級說明的資料，請參閱英文版本。

B

GOOD - good performance in all course learning outcomes and exceeding expectation in some of them; demonstration of good understanding of the subject matter and the ability to use proper concepts and materials to solve most of the problems encountered.

有關等級說明的資料，請參閱英文版本。

C

FAIR - adequate performance and meeting expectation in all course learning outcomes; demonstration of adequate understanding of the subject matter and the ability to solve simple problems.

有關等級說明的資料，請參閱英文版本。

D

MARGINAL - performance barely meets the expectation in the essential course learning outcomes; demonstration of partial understanding of the subject matter and
the ability to solve simple problems.

有关等級說明的資料，請參閱英文版本。

F

FAILURE – performance does not meet the expectation in the essential course learning outcomes; demonstration of serious deficiencies and the need to retake the course.

有关等級說明的資料，請參閱英文版本。

Equivalent Offering:
Units: 3 (Min) / 3 (Max) / 3 (Acad Progress)
Grading Basis: Graded
Repeat for Credit: N
Multiple Enroll: N
Course Attributes:

Topics:

COURSE OUTCOMES

Learning Outcomes:

Students will be able to:
1. know the basics on both the combinational and sequential logic designs
2. do VHDL designs for some simple systems
3. debug the design

Course Syllabus:

This course introduces the digital concepts; number systems; operations and codes; logic gates; Boolean algebra and logic simplification; combinational logic; functions of combinational logic; flip-flops and related devices; counters; finite state machines; programmable logic devices - programming and sequential logic applications; memory and storage; integrated circuit technologies.

Assessment Type:

Essay test or exam : 50%
Others : 50%
Feedback for Evaluation:
1. Course evaluation
2. Qualitative feedback from students

Required Readings:

Recommended Readings:
2. Introduction to logic design, Alan B. Marcovitz

OFFERINGS
1. ENGG2020  
   Acad Organization=ENO; Acad Career=UG

COMPONENTS
EXR : Size=30; Final Exam=N; Contact=0  
LEC : Size=30; Final Exam=Y; Contact=3  
TUT : Size=30; Final Exam=N; Contact=1

ENROLMENT REQUIREMENTS
1. ENGG2020  
   Enrollment Requirement Group:  
   Not for students who have taken ELEG2120 or ESTR2104.

   New Enrollment Requirement(s):
   Exclusion = no change

CAF
- eLearning hrs for blended cls: 0
- No. of micro-modules: 0
- Research components (UG): 0%

<END OF REPORT>