澳門大學
UNIVERSIDADE DE MACAU
UNIVERSITY OF MACAU

Major Programme:	Master of Science in Microelectronics & Master of Philosophy in Microelectronics		
Course Type:	☐ CM – Compulsory Major ☑ RE – Required Elective ☐ L&S – Languages and Skills ☐ CPE – Community and Peer Education ☐ * GE – General Education ☐ MI – Minor ☐ FE – Free Elective		
Course Title: (in Chinese and English)	Data Converter Integrated Circuits 數據轉換器集成電路設計	Suggested Year of Study:	Year 1
Duration:	☑ Semester Course ☐ Yearly Course	Credit Units:	3
Grading System:	☑ Letter Grade ☐ P/NP	Pre-requisite: (if any)	None
Medium of Instruction:	English		
Course Description:	This course will provide an introduction to the various type of Data Conversion System. The performance characterization of Data Converters will be presented, and various type of data converters (including Analog-to-Digital and Digital-to-Analog) will be discussed. This course can be served as the beginning course in the field of Data Conversion and Signal Processing in the area of Analog IC Design.		
Intended Learning Outcomes (ILO):	This course enables students to have: ・Recognize and analyze the definitions of performance parameters for data converters, in datasheet and research papers. ・Design the various types of data converters. ・Implement the systems above using EDA tools widely adopted in IC industries.		

Major Assessment Methods:	Case Study	Role Playing	Student Presentation	Individual project / paper	Group project / paper	Group discussions	Writing Assignment	Exercises & problems	Service learning	Internship	Field study	Company visits	Reading & Writing Assessments / tests	Listening & Oral Assessments / tests	Others (please specify)
Class Participation / Discussion 0 %															
Assignment(s) 0 %															
Test(s) 0 %															
Examination 0 %															
Others: Project 100 %				√	√										

Course Content: (topic outline)	- Introduction - Data Converter Specifications - Nyquist Rate Digital-to-Analog Converters - Nyquist Rate Analog-to-Digital Converters - Oversampling Converters