**Ministry of Higher Education
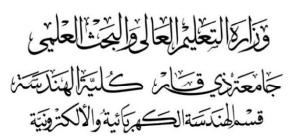and Scinetific Research
Thi-Qar University
Collage of Engineering
Electrical and Electronic Engineering Dept**

وَزارةُ التَعلِيمِ العَالِى وَالبَحْثَ العِلمِى
جَامِعَة ذِى قَــارَ كَـلِيَة الهَنْدَسَـة
قسم الهندسة الكهربائية والألكترونية

العدد :

التاريخ :   /   /   ٢٠

Course number and name	EE 4500: Digital Design
Credits and contact hours	3 credits and 3 hours
Course coordinator	
Textbook	Digital Systems Design Using VHDL (2 nd Edition), Charles H. Roth, Lizy Kurian John, 2008, Thomson a. Xilinx WebPack b. Adept software by Digilentinc.com
Course Information	a. Prerequisites: EE 1500 Digital Logic b. Selective Elective
Topics to be covered	– Time faults in combinational logic circuits – Stuck-at-faults in combinational logic – Architecture of CPLDs and FPGAs, design and simulation of combinational logic circuits using VHDL and ModelSim – Synchronous sequential circuit analysis and synthesis, Synchronous logic design with state machines, the ASM method,– Finite state machine models – Design and simulation of synchronous finite state machines using FPGAs, VHDL and ModelSim – Impediments to synchronous logic circuit design – Programmable (microcoded) system controllers – Analysis and design of asynchronous sequential machines, hazards in asynchronous circuits – Use of PPGAs, VHDL and ModelSim to design and simulate asynchronous sequential logic circuits – Introduction to microprocessor-based digital systems design, interfacing to O devices