Course Name	*Hardware Security*		أمن الأجهزة	
Course Information	**Course Code**	**Course No.**	**Credit Hour**	**Prerequisite(s)**
	0913631	CE 631	3 (3-0-6)	0911611
Course Track	☐ Program Core ☒ Electives			

Course Description

Computer Hardware is the most valuable and expensive property for the organizations and business. Problem in hardware components results into malfunction of system and lost or corruption of file. This course is designed to study the approaches for hardware security which enables the students for protection of computer hardware from the physical factors like fire, heat, incorrect voltage, dust or malicious activities. Upon completing the course, students will understand the vulnerabilities in current digital system design flow and the physical attacks to these systems. The students explore the secure processor architectures, and the concepts of channel attacks, Hardware Trojan and trusted integrated circuit (IC) design, Trust platform module (TPM), and physical unclonable function (PUF).

Course Outcomes

After the completion of this course, the student will be able to:

1. **Define** Intellectual Property Protection and **analyze** the social impact of intellectual property law and policy. [A]
2. **Discuss** and **analyze** the resilience of crypto implementations against side channel attacks. [A]
3. **Design, analyze** and **illustrate** reduction of logical expressions to implement sequential systems. [B]
4. **Evaluate** and **apply** digital watermarking for information security. [B]

Assessment Policy	**Assignments**	10%	**Quiz**	-	**Project**	20%
	Midterm	20%	**Final**	40%	**Others**	10%
Textbook	Bhunia, Swarup, and Mark Tehranipoor. Hardware Security: A Hands-on Learning Approach. Morgan Kaufmann, 2018.					
References	1. Mukhopadhyay, Debdeep, and Rajat Subhra Chakraborty. *Hardware Security: Design, Threats, and Safeguards.* Chapman and Hall/CRC, 2014. 2. Y. Younan, W. Joosen, and F. Piessens, "Runtime countermeasures for code injection attacks against C and C++ programs," ACM Computing Surveys 44(3):1-28, June 2012.					