Digital Electronics

- **Course number and name:**
  CC 341 – Digital Electronics

- **Credits and contact hours**
  Credits Hours: 3Hrs
  Contact Hours: In Lecture 2Hrs, In Tutorial 2Hrs.

- **Instructor's or course coordinator's name**
  Coordinator Name: Prof. Dr. Attallah Hashad

- **Text book, title, author, and year**
  - David A. Bell "Solid State pulse circuits", 4th Edition, Prentice Hall, 1999

- **Specific course information**
  a. **Catalog description**
     Pulse fundamentals – Diodes - Transistors - Digital circuit's analysis - Design of diodes and transistors circuits - Design and analysis of DTL, TTL and CMOS circuits.
  b. **prerequisites or co-requisites**
     Prerequisites: EC238
  c. **Type of the course (required, elective, or selected elective course) in the program**
     Required Course

- **Specific goals for the course**
  a. **Specific outcomes of instruction**
     After the completion of this course the students will be able to:

	Course Learning Outcomes	SO
1	Understand the different integrated circuit logic gates (DTL, HTL, RTL, TTL, ECL, MOS, I2L, and CMOS).	B,C
2	Discuss the characteristics and performance of each of the above types of IC logic gates.	C
3	Design of logic gate circuits as well as circuits to interface between different types of IC logic gates.	B,C,E

Topics to be covered

- Pulse Fundamentals
- Diode Switching
- Transistor Switching
- Design of Basic logic gates
- Integrated circuits Logic Gates Performance Characteristics
- TTL Logic gates
- Emitter coupled logic, Integrated Injection logic
- P-MOS and N-MOS logic gates
- CMOS Logic Gates
- Comparison and interfacing of different logic gate types
- Introduction to logic circuit Design