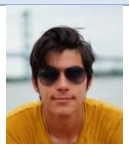
School of Computer Science
Faculty of Science

COMP-2650: Computer Architecture I: Digital Design
Winter 2021

Laboratory Guide v1.0	
Description[1]	This laboratory guide is intended for the student who takes *COMP2650: Computer Architecture I: Digital Design* course at the School of Computer Science. It includes 10 laboratory tutorials. Each laboratory covers design and analysis practices tightly connected to the course lectures, so the attendance at the lectures is highly encouraged for a better understanding of the treated subjects. The student is encouraged to go through the guide in the presented order, since each laboratory may contain elements studied, designed, and analyzed in the previous ones. Each chapter of this laboratory guide may start with a short presentation of the necessary theoretical concepts, followed by design and analysis practices to improve the students' problem-solving ability. The weekly laboratory assignments that a student must do are found at the end of each chapter. The student is encouraged to carefully read all the laboratory material before attending the laboratory session to be familiar with the tasks that must be designed and analyzed throughout the laboratory.
Co-requisite	COMP2650: Computer Architecture I: Digital Design
Homepage	Blackboard Collaborate Ultra → Labs
Lab Sections	Blackboard Collaborate Ultra → Labroom Lab Instructor (GA): **Moeed Khalid (khalid21@uwindsor.ca)**[2] Section 53, Wednesday 04:00PM - 05:20PM Section 52, Wednesday 05:30AM - 06:50PM Lab Instructor (GA): **Manil Patel (patel3h@uwindsor.ca)** Section 51, Wednesday 07:00 PM - 08:20 PM Section 54, Wednesday 08:30 PM - 09:50 PM
Graduate Assistants (GA)	 Moeed Khalid khalid21@uwindsor.ca  Manil Patel patel3h@uwindsor.ca
Teaching Assistants (TA)	 Ariya Rasekh rasekh@uwindsor.ca  Ravi Bhagat bhagatr@uwindsor.ca  Misha Patel patel27r@uwindsor.ca  Faraz Naseem naseemf@uwindsor.ca  Dhwani Patel patel891@uwindsor.ca
# Labs	10 (Lab02→Lab12)
Submission Due Date	Next Week Tuesdays Midnight Anywhere on Earth (AoE), Wednesday 7:00 AM Eastern Time
Grade Release Date	Next Week Monday 7:00 AM Eastern Time
Marking Scheme	10 Labs × 2% Each = 20%
Attendance	Encouraged but not mandatory due to time zone accommodation in the COVID-19 era.

[1] This course is based on schematic design only and Hardware Description Language (HDL) is not covered.

[2] Wishing to contact the lab instructors or assistants, please use [uwinid]@uwindsor.ca and indicate full name, studentid, the course title.

Office Hours	N/A.	
Schedule[3,4]	**Lab02: Programming Environment Setup**	Jan. 11-19
	Lab03: Number Systems (Complements)	Jan. 18-26
	Lab04: Number Systems (Conversion)	Jan. 25-Feb. 02
	Lab05: Number Systems (Signed-Magnitude)	Feb. 01-09
	Lab06: Number Systems (Signed-2's-Comp.)	Feb. 08-23 *(Two-Week Lab)*
	Lab07: Reading Week: No Laboratory	Feb. 13-21
	Lab08: Combinational Logic (Truth Table)	Feb. 22-Mar. 02
	Lab09: Combinational Logic (CSoP)	Mar. 01-09
	Lab10: Combinational Logic (CPoS)	Mar. 08-16
	Lab11: Combinational Logic (Gray Code)	Mar. 15-23
	Lab12: Sequential Logic (Shift Operators)	Mar. 22-30
Programming Language	C	

Notes to Students:

1. Each lab is accompanied by a manual as well as a submission deadline. Each laboratory covers design and analysis practices tightly connected to the course lectures, so attendance at the lectures is highly encouraged for a better understanding of the treated subjects. The student is encouraged to go through the manual in the presented order since each laboratory may contain elements studied, designed, and analyzed in the previous ones. Each Lab's manual starts with a short presentation of the necessary theoretical concepts, followed by design and analysis practices to improve the programming ability of the students. The weekly Lab that a student must do is found at the end of each manual. The student is encouraged to carefully read all the laboratory material before attending the laboratory session to be familiar with the tasks that must be designed and/or analyzed throughout the laboratory.

2. **Communication:** Students are required to communicate with the lab instructor foremost based on the lab section they register regarding any Lab and Lec submissions such as:
   - Reopening for another submission attempt,
   - Reviewing markings of a submission,
   - Accepting a late submission for a verifiable reason, etc.

   If not resolved, students reach out to the course instructor.

3. **Student Evaluation of Lab Instructor:** The student evaluation of the lab instructor will be conducted during the last weeks of the classes.

[3] This is a preliminary schedule. The material and depth and order of Labs are subject to change at the discretion of the instructor and student pace.

[4] There is no lab session in the first and last weeks of the course as well as the reading week.