

**LaGuardia Community College**  
**City University of New York**  
**Mathematics Department – Engineering Science**  
**MAE 099: Introduction to Engineering**

3 Lab hours; 2 credits

**Prerequisite:** MAT200

**Course Description:**

This is the first engineering course. Students meet once a week and are introduced to engineering design through hands-on laboratory work using computer applications. They are introduced to programming a robot to perform a specific task and to designing a digital clock. Additionally, they work in groups on design projects and are expected to use computers for documentation, data analysis, and for maneuvering robots.

**Textbook:** Freshman Design Manual I by Ghosn, Benenson, Ahn, Ganatos.

**Evaluations:** Projects Reports      60%  
Presentations                      40%

WEEK	TOPICS
	<b>BRIDGE DESIGN MODULE:</b>
1	Introduction to engineering disciplines
2	Introduction to Robotics and Kinematics
3	Understanding the Robot Arm System and Programming the Robotic Arm
4-5	Programming the Robotic Arm to Perform a Task
6	Robot Design: Implementation and Testing of Programs
7	<b>Presentation of the Robot Design Project</b>
8	Binary numbers
9	Introduction to Digital Clock
10-11	Designing the Digital Clock
12	Digital Clock Design: Implementation and Testing
13	<b>Presentation of the Digital Clock Project</b>