Homework Assignment: Intelligent Sensor Systems (E-Nose)

■ Objectives

• Understand the principles of intelligent sensor systems and electronic noses.
• Connect theoretical knowledge to practical and real-world applications.
• Develop skills in critical analysis, design thinking, and personal reflection.

■ Tasks

• 1. Introduction: Define intelligent sensor systems and explain how an e-nose works (1 page).
• 2. Case Study: Choose one local application (food, air quality, health, etc.) and propose how an e-nose can be used (2–3 pages).
• 3. Design Challenge: Create a block diagram of your proposed e-nose system. Optionally add pseudocode or simple code (1–2 pages).
• 4. Critical Reflection: Discuss two limitations of e-nose systems and suggest improvements. Consider the unknown gas scenario (1–2 pages).
• 5. Personal Insight: Explain how you would apply intelligent sensor systems in your own field or community (½–1 page).
• 6. Conclusion: Summarize key lessons. Include at least 2 references from scientific papers (½ page).

■ Deliverables

• Report length: 6–8 pages (PDF format).
• Typed, font size 11–12, double spaced.
• Include diagrams, references, and personal reflection.

■ Grading Checklist (100 pts)

Section	Criteria	Points
Introduction	Definition, working principle, own words	15
Case Study	Application relevance, local context, challenges	20
Design Challenge	Block diagram, flow, originality, detail	20
Critical Reflection	Two limitations, improvements, unknown gas scenario	20
Personal Insight	Personalized, authentic, clear link	15
Conclusion & References	Summary, references, formatting	10
TOTAL		100