RAISE 2025 PROGRAM

Monday, July 14, 2025 : 09:00-17:00	
8:30 – 9:00	**Registration**
9:00 – 9:30	**Welcome message** ***Pr. Chokri Abdelmoula (ENET'Com President) & Dr. Omar Cheikhrouhou (RAISE Chair)***
ROS 2 Foundations for Field Robots	
09:30 – 12:00 **Morning Session**	• Understanding the ROS 2 computation graph and communication • Exploration of topics, services & actions in ROS 2 • Publishing velocity commands using geometry_msgs/Twist • Mastering frame transforms and odometry concepts • Implementing reactive obstacle avoidance • Demonstration: Navigating a robot between crop rows ***Pr. Anis Koubaa (Alfaisal University/ScaleX Innovation)***
12:00 – 13:00 : Launch BREAK	
13:00 – 16:00 **Hands-On Lab**	Hands-on exercise: Fork a pre-written GitHub repository and complete missing nodes & launch files to: • Drive a simulated robot within the Gazebo environment • Deploy your code on a Turtlebot-like platform ***Dr. Houssam Chouikhi (ISSIG, TUN) & Dr. Nidhal Ayadi (Sfax university, TUN)***
16:15 – 17:00 **Assessment**	Mini-Quiz #1. Scoring ≥ 70% awards the Level-1 Certificate.

Tuesday, July 15, 2025 : 09:00-17:00	
AI & Computer Vision for Plant Diagnostics	
09:00 – 12:00 **Morning Session**	• Evolution of AI: From AlexNet to Generative and Agentic AI • Introduction to vision-language models: OpenAI GPT-4o and Google Gemini • YOLOv10 pipeline for real-time plant disease detection • Prompt engineering with large language models for classification ***Pr. Anis Koubaa (Alfaisal University/ScaleX Innovation)***
12:00 – 13:00: BREAK	
13:00 – 16:00 **Hands-On Lab**	• Train and fine-tune YOLO model • Utilize Gemini-Vision API to label and classify leaf ailments • Integrate detection results and language model outputs into a ROS 2 diagnostic topic ***Dr. Omar Cheikhrouhou (ENET'Com, TUN) & Dr. Amira Echtioui (ENSTAB, TUN)***
16:15 – 17:00 **Assessment**	Mini-Quiz #2. A score ≥ 70% grants the Level-2 Certificate.

Wednesday, July 16, 2025 : 09:00-13:30	
Integrated Challenge & Awards Ceremony	
09:00 – 09:30 **Opening Ceremony**	Welcome address and overview of the day's integrated challenge and award proceedings.
09:30 – 12:30 Parallel Sessions	
RAISE Competition Teams will compete in various robotics challenges designed to test their skills and knowledge acquired over the first two days.	**PCB Workshop** • Basics of Electronics for PCB Prototyping • Principles of PCB Design • Practical PCB Design Exercises • Visit to the CRNS PCB Prototyping Lab ***Dr. Mohamed Kharrat (Sfax university, TUN)***
Awards Ceremony & Closing Remarks	
12:45 – 13:30	Recognition of competition winners, distribution of certificates, and closing speeches to celebrate participants' achievements and the event's success.