

RAISE 2025 PROGRAM

Monday, July 14, 2025 : 09:00-17:00	
8:30 – 9:00	Registration
9:00 – 9:30	Welcome message <i>Pr. Chokri Abdelmoula (ENET'Com President) & Dr. Omar Cheikhrouhou (RAISE Chair)</i>
ROS 2 Foundations for Field Robots	
09:30 – 12:00 Morning Session	<ul style="list-style-type: none"> 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 <i>Pr. Anis Koubaa (Alfaisal University/ScaleX Innovation)</i>
12:00 – 13:00 : Launch BREAK	
13:00 – 16:00 Hands-On Lab	<p>Hands-on exercise: Fork a pre-written GitHub repository and complete missing nodes & launch files to:</p> <ul style="list-style-type: none"> Drive a simulated robot within the Gazebo environment Deploy your code on a Turtlebot-like platform <i>Dr. Houssam Chouikhi (ISSIG, TUN) & Dr. Nidhal Ayadi (Sfax university, TUN)</i>
16:15 – 17:00 Assessment	Mini-Quiz #1. Scoring $\geq 70\%$ 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	<ul style="list-style-type: none"> 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 <i>Pr. Anis Koubaa (Alfaisal University/ScaleX Innovation)</i>
12:00 – 13:00: BREAK	
13:00 – 16:00 Hands-On Lab	<ul style="list-style-type: none"> 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 <i>Dr. Omar Cheikhrouhou (ENET'Com, TUN) & Dr. Amira Echtioui (ENSTAB, TUN)</i>
16:15 – 17:00 Assessment	Mini-Quiz #2. A score $\geq 70\%$ 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 <ul style="list-style-type: none"> • 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.