



MOTORVEHICLE  
UNIVERSITY OF  
EMILIA-ROMAGNA

**S&W SCHOOLS**

OFF-HIGHWAY  
VEHICLE DESIGN

# Agenda

DATE: JUNE 23 - JULY 4 2025

## MONDAY 23

8.45-13

**WELCOMING SPEECH AT DISTAL**

**OFF-HIGHWAY VEHICLES: DESCRIPTION, FIELD USES, AND CHALLENGES IN THEIR DEVELOPMENT**  
(MICHELE MATTETTI, MASSIMILIANO VARANI  
LUIGI BIANCO)

13 - 14.30

**LUNCH**

14.30-18

**TECHNICAL VISIT AT UNIBO FARM**

## TUESDAY 24

8.45-13

**MODELING, CONTROL AND TESTING OF ADVANCED POWERTRAINS: INTRODUCTION AND OVERVIEW OF OFF-HIGHWAY APPLICATIONS** (NICOLÒ CAVINA)

**FLUID POWER SYSTEMS OVERVIEW FOR MODERN OFF-HIGHWAY APPLICATIONS** (ANDREA DE PASCALE)

**AGRICULTURAL VEHICLES: AN OVERVIEW ON THE STATE OF THE ART AND THE LEGISLATIVE FRAMEWORK** (LORENZO IULIANO)

13 - 14.30

**LUNCH**

14.30-18

**TECHNICAL VISIT AT UNIBO FARM: DEMONSTRATION OF HOMOLOGATION AND TRACTION TESTS FOR AGRICULTURAL TRACTORS**

## WEDNESDAY 25

8.45-13

**OPPORTUNITIES AND CHALLENGES FOR THE ELECTRIFICATION OF OFF-HIGHWAY VEHICLES** (CLAUDIO ROSSI)  
**DESCRIPTION OF HACKATHON CHALLENGES WITH A Q&A SESSION AND TEAM DEFINITION** (GUSZTAV OTTRUBAY)

13 - 14.30

**LUNCH**

14.30-18

**INTRODUCTION TO PYTHON PROGRAMMING WITH HANDS-ON APPLICATIONS FOR LEGO VEHICLES** (GUSZTAV OTTRUBAY)\*

\* FOR THIS SESSIONS ALL THE STUDENTS MUST BRING THEIR OWN LAPTOP

## THURSDAY 26

8.45-13

**BASICS OF TERRAMECHANICS** (MICHELE MATTETTI)

**TRACTION DEVICES FOR OFF-HIGHWAY VEHICLES (TYRES AND UNDERCARRIAGE SYSTEMS)** (BERCO, OTHER TO DEFINE)

13 - 14.30

**LUNCH**

14.30-18

**INDEPENDENT HACKATON ACTIVITY**

## FRIDAY 27

8.45-13

**CNH VISIT**

**WELCOME AND INTRODUCTION** (MARIO DE AMICIS)

**PERFORMANCE SIMULATION IN OFF-HIGHWAY VEHICLES** (CARLO DE MARCO)

**INTRODUCTION: DESIGN DEVELOPMENT PROCESS PRECISION TECHNOLOGY** (GABRIELE ANSALONI)

**SYSTEM MODELING AND HIGH PERFORMANCE SYSTEMS** (FEDERICA GROSSI)

**CNH DRIVELINE SYSTEMS** (ALBERTO FRULLI)

13 - 14.30

**LUNCH**

14.30-18

**NEW HIRED EXPERIENCE** (E. SANTUNIONE AND M. MILANI)

**VIRTUAL REALITY AND DIGITAL TWIN** (G. SCOTTO DI VETTA, M. RIGHI)

**VISIT TO DYNAMIC SIMULATOR AND TESTING FACILITIES** (A. VISCIANO, F. DAVIDE)

WRAP UP - Q&A

## MONDAY 30

8.45-13

**INDEPENDENT HACKATON ACTIVITY**

13 - 14.30

**LUNCH**

14.30-18

**INDEPENDENT HACKATON ACTIVITY - OFFICIAL TEST ON THE PROVING GROUND**

## TUESDAY 1

8.45-13

**WELCOMING SPEECH AT DIF - DEPARTMENT OF ENGINEERING ENZO FERRARI**

**ADVANCED SENSING OF OFF-HIGHWAY VEHICLES**

**ADVANCED AUTONOMOUS CONTROL OF OFF-HIGHWAY VEHICLES**

**NVH MODELLING, SIMULATION AND EXPERIMENTATION IN AUTOMOTIVE DRIVELINE**

**OFF-HIGHWAY COMPONENTS DESIGN AND MANUFACTURING** (FABIANO MALARA, CNH)

13 - 14.30

**LUNCH**

14.30-18

**SOFT SKILLS FOR PROJECT DEVELOPMENTS** (MOTOR VALLEY ACCELERATOR)



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## WEDNESDAY 2

8.45-13 INDEPENDENT HACKATON ACTIVITY

13 - 14.30 LUNCH

14.30-18 INDEPENDENT HACKATON ACTIVITY

## THURSDAY 3

8.45-13 PITCHES OF TEAMS IN FRONT OF AN  
EVALUATION PANEL FOLLOWED BY AWARD  
CEREMONY (40 MIN PER TEAM)

13 - 14.30 LUNCH

14.30-18 HACKATON COMPETITION

FROM 18 SOCIAL DINNER

## FRIDAY 4

8.45-13 **MUNER TEACHING ACTIVITIES, Q&A SESSION  
WITH CNH INDUSTRIAL**  
PRESENTATION OF MUNER TEACHING  
ACTIVITIES, FOLLOWED BY A Q&A SESSION WITH  
CNH INDUSTRIAL HR AND ALUMNI NOW  
WORKING IN THE COMPANY. SHOWCASING OF  
COLLABORATIVE PROJECTS, INCLUDING  
MASTER'S THESES AND PHD RESEARCH  
DEVELOPED IN PARTNERSHIP WITH CNHI.

13 - 14.30 SOCIAL LUNCH OFFERED BY THE SUMMER  
SCHOOL



UNIBO - DISTAL: AULA E-LEARNING VIALE GIUSEPPE FANIN 50, FIFTH FLOOR, BOLOGNA



UNIBO - FARM: VIA GANFOLFI 19, CADRIANO BOLOGNA



UNIBO - DISTAL: CLASSROOM 10, 8, AND 9, 5 AT VIALE GIUSEPPE FANIN 46/48, GROUND  
FLOOR, BOLOGNA



CNH: VIA DELLE NAZIONI 55, MODENA



UNIMORE - DIEF: VIA PIETRO VIVARELLI, 10, MODENA