



ADMISSION TO DOCTORAL STUDIES

Session September 2022

Field of doctoral studies: Forestry

Doctoral supervisor: Prof.dr. Stelian Alexandru Borz

TOPICS FOR THE ADMISSION TO DOCTORAL STUDIES

TOPIC 1: *Applications of LiDAR, UAV remote sensing and digital twinning technologies in forest engineering*

Main aspects to be considered – *LiDAR platforms and sensing, capabilities and limitations, software for point cloud processing, UAV remote sensing, data processing and cloud generations, software for data processing, structure-from-motion, augmented reality, digital twinning techniques and technologies, accuracy, forest operations, forest transportation infrastructure, algorithms, interpolation, optimisation, forestry 4.0.*

Recommended bibliography: textbooks and articles on the topic.

Prerequisites: *not the case.*

TOPIC 2: *Evaluation and development of smart solutions for wood traceability and sourcing*

Content: *wood procurement, wood micro- and macrostructure, timber supply chains, process engineering, sensors, marking and tracking systems, digital systems, optical systems, digital image processing, LiDAR systems, cloud processing, system engineering, computer vision, augmented reality, machine learning, forestry 4.0*

Recommended bibliography: textbooks and articles on the topic.

Prerequisites: *not the case.*

Doctoral supervisor,

Prof. Dr. Stelian Alexandru Borz

Signature

Coordinator of the field of doctoral studies,

Prof. Dr. Ovidiu Ionescu

Signature

