

## PhD in Information and Communication Technology for Health

Università degli Studi di Napoli Federico II

**Module Title: Remote Sensing for Ecosystem and Public Health: Technologies and Applications**

**Lecturer: Alessio Di Simone**

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Department of Electrical Engineering and Information Technology

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**CV: Alessio Di Simone** is an Assistant Professor of Electromagnetic Fields at the Department of Electrical Engineering and Information Technology of the University of Naples Federico II. In 2016 he was a visiting researcher at the Department of Signal Theory and Communications of the Polytechnic University of Catalonia-BarcelonaTech, Barcelona, Spain. In 2017 and 2018 he was a visiting researcher at the NATO Science and Technology Organization Centre for Maritime Research and Experimentation, La Spezia, Italy. His main research interests are in the field of microwave remote sensing and electromagnetics including modeling of the electromagnetic scattering from natural surfaces, urban areas, and artificial targets, and simulation and processing of synthetic aperture radar (SAR) and GNSS-R data.

**Lecturer: Expert in agricultural technologies – Prof. XXXX (TBC)**

**Dates and Locations (rooms are in ed. 3/A, floor I, via Claudio 21, Napoli)**

Date	Hours	Room	Lecturer
5 settembre 2023	10.30-12.30	Ex Softel I floor	Alessio Di Simone
8 settembre 2023	15:30-17:30	Ex Softel I floor	Alessio Di Simone
12 settembre 2023	10.30-12.30	Ex Softel I floor	Alessio Di Simone
15 settembre 2023	15.30-17.30	Ex Softel I floor	Alessio Di Simone
19 settembre 2023	10.30-12.30	Ex Softel I floor	Alessio Di Simone
22 settembre 2023	15.30-17.30	Ex Softel I floor	TBC

**Content**

## TEACHING MODULE Announcement

**I Lesson – Introduction to remote sensing:** Introduction to remote sensing and Earth Observation; active and passive sensors; basic principles and applications

**II Lesson – Active remote sensing:** basic principles of SAR; SAR data processing and products; missions and systems; applications.

**III Lesson – Passive remote sensing:** basic principles multi/hyper-spectral sensors; missions and systems; data processing and products; spectral resolution

**IV lesson – Active remote sensing – laboratory:** introduction to SNAP; SAR data import and interpretation; application: oil slick detection

**V Lesson – Passive remote sensing – laboratory:** multispectral data import and RGB image formation; application: biomass estimation

**VI Lesson – Remote sensing for Agricultural Technologies:** crop models and remote sensing for: crop quality assessment; sustainable agriculture; organic crop; yield prediction; pest detection; pesticides detection; crop monitoring and characterization; water management. final test. (TBC)

### ECTS Credits: 2.4

#### Notes

Doctoral Students are requested (starting from Lesson IV) to bring their own notebook with SNAP Desktop software installed.

Doctoral Students with noticeable experience on this Module topics can participate as Tutors.

Participants to the Module (including those interested to the Tutorship positions) are requested to e-mail to prof. Alessio Di Simone the following: Student name, name of the PhD course and cycle.

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Info: **Prof. Alessio Di Simone** - tel. 081 7683107 – [alessio.disimone@unina.it](mailto:alessio.disimone@unina.it)