



SVEUČILIŠTE U SPLITU
FAKULTET GRAĐEVINARSTVA,
ARHITEKTURE I GEODEZIJE

UNIVERSITY OF SPLIT
FACULTY OF CIVIL ENGINEERING,
ARCHITECTURE AND GEODESY

Application of Ground Penetrating Radar in Civil Engineering

2018



University of Split

Spend your summer at
SPLIT SUMMER SCHOOL for students
of Civil Engineering, Architecture & Geodesy
CROATIA / Split

Welcome to Split Summer School!

The Course: Application of Ground Penetrating Radar (GPR) in Civil Engineering

Non-destructive methods (NDT) are widely used in many areas of civil engineering since they can provide insight in material or structural properties of the concerned object without damage or weakening of the, for example, structural element. Each NDT method can provide information on some specific property, but the combination of several NDT methods will result in very elaborate answer. This course will focus on using georadar for detection of cracks in structural elements, reinforcement pattern in reinforced concrete, underground and buried objects, but it will be demonstrated how to combine GPR with other NDT methods (FLIR camera, ambient vibration and ultrasound). The students will be trained to work with three different GPR antennas (200 MHz, 600/900 MHz and 2 GHz), FLIR camera and ultrasound device.

We would like to introduce you to the people organising the course and to the lecturers.

Organising committee

<p>Boris Trogrlić</p> <p>Ph.D. Dean, Associate professor btrogrlic@gradst.hr</p>	<p>Mirela Galić</p> <p>Ph.D. Vice Dean for Int. Cooperation, Associate professor mgalic@gradst.hr</p>	<p>Ana Jeličić</p> <p>Mag. ing. aedif. Academic Associate ana.jelicic@gradst.hr</p>	<p>Dragan Poljak</p> <p>Ph.D. Full professor dragan.poljak@fesb.hr</p>
			



Lecturers

<p>Dragan Poljak</p> <p>Ph.D. Full professor dragan.poljak@fesb.hr</p>	<p>Damir Varevac</p> <p>Ph.D. Dean of Faculty of Civil Engineering Osijek Associate professor dvarevac@gfos.hr</p>	<p>Ivica Guljaš</p> <p>Ph.D. Vice Dean of Faculty of Civil Engineering Osijek Full professor iguljas@gfos.hr</p>	<p>Silvestar Šesnić</p> <p>Ph.D. Assoc. professor silvestar.sesnic@fesb.hr</p>
			

Program structure

Sunday, 2/9 Faculty Entry hall

19.00-20.30	Registration
20.30 - ...	Welcome and address by Organising Committee

Monday, 3/9 Classroom B2, 4th floor

9.00 – 9.30	Introduction (to the course, the participants and the lecturers)
09.30 - 10.30	Lecture: Introduction into GPR technology
10.30 - 11.00	Coffee break: cafeteria, -1 st floor
11.00 - 12.30	Lecture: Introduction into GPR technology
12.30 - 13.30	Lunch break: student restaurant, -1 st floor
13.30 - 14.15	Exercise: Demonstration of GPR equipment

Tuesday, 4/9 Classroom B2, 4th floor

09.00 – 10.30	Lecture: Fundamentals of electromagnetics and applications
10.30 - 11.00	Coffee break: cafeteria, -1 st floor
11.00 - 12.30	Exercise: Computer simulation of GPR operation using gpr Max software tool



12.30 - 13.30	Lunch break: student restaurant, -1 st floor
13.30 - 14.15	Exercise: Set up of GPR equipment, calibration of antenna

Wednesday, 5/9 Classroom B2, 4th floor

09.00 – 10.30	Exercise: Detecting reinforcement with 2 GHz antenna
10.30 - 11.00	Coffee break: cafeteria, -1 st floor
11.00 - 12.30	Exercise: Detecting reinforcement with 2 GHz antenna
12.30 - 13.30	Lunch break: student restaurant, -1 st floor
13.30 – 15.00	Lecture: Introduction into other non-destructive methods (NDT): FLIR and ultrasound

Thursday, 6/9 Classroom C4, 4th floor

09.00 – 10:30	Exercise: Detecting underground infrastructure (electric cables, water or sewage pipes) with 200 MHz and 600/900 MHz antennas
10.30 - 11.00	Coffee break: cafeteria, -1 st floor
11.00 – 12.30	Exercise: Survey of the road structure with 200 MHz and 600/900 MHz antennas
12.30 - 13.30	Lunch break: student restaurant, -1st floor
13.30 – 16.00	Exercise: Use of FLIR camera, ultrasound, vibration measuring
	Free time on beach

Friday, 7/9 Classroom C4, 4th floor

09.00 – 10.30	Final project: group work with assistance (completion of the projects and preparation of the presentations)
10.30 - 11.00	Coffee break: cafeteria, -1 st floor
11.00 – 12.30	Final project: group work with assistance (completion of the projects and preparation of the presentations)
12.30 - 13.30	Lunch break
13.30 - 15.30	Final projects presentations
	Free time
18.30-19.30	Diploma awarding
19:30 -	Dinner at Faculty restaurant

