



SPLIT SUMMER SCHOOL STSS2021

COURSE: Modern and Robotic Joining Technologies of Conventional and Advanced Structural Materials

Contact person: Josip Vasilj, josip.vasilj@fesb.hr

Main topics:

- Conventional and Advanced Structural Materials – features, properties, joinability and industrial applications
- Overview of Contemporary Joining Technologies - principle of operation, features and industrial applications
- Basics of Robotic Joining Technologies - typical configurations and basic elements and industrial applications
- Laboratory Demonstrations and Hands on - Demonstration of Robotic Electric Arc Welding of Steels and Light alloys; Off-line Robotic Welding Program and on-line Robotic Welding Mode



Programme structure:

- course in 5 successive days (20 hours in total) – from Monday to Friday
- 4 h per day (3 h of lectures + 1 h of exercises or practical demonstrations)

Important dates:

Course dates: 30st/August/2021 – 03th/September/2021

Deadline for application: 01st/August/2021

Confirmation of the course: 15th/August/2021

Payment due by: 23th/August/2021

Price of the course: 300 € (tax included)

Programme plan:

Day 1

INSIGHT in CONVENTIONAL and ADVANCED STRUCTURAL MATERIALS

Metallic Materials: Steels, Aluminium Alloys, Stainless Steels, Titanium and Titanium Alloys, Nickel Alloys, Magnesium and Copper and their Alloys

Composite Materials: MMC, PMC, CMC, Layered and Sandwich Composites. Functionally Graded Materials

Day 2 and Day3

OVERVIEW OF SELECTED MODERN JOINING TECHNOLOGIES

Fusion and solid state welding processes - Electric arc welding, High energy beam welding processes, Friction Stir Welding, Micro Welding; Arc Brazing; Adhesive Joining, Hybrid Joining Technologies, Mechanical fastening.

Programme lecturers:

Nikša Krnić, Ph. D. Assoc. Prof.

Associated Professor at the University of Split, Faculty of Electrical Engineering, Mechanical Engineering and naval Architecture, Dept. of Production Engineering, Welding Laboratory, 21000 Split, CROATIA

Domagoj Kojundžić, M. Eng. Mech. Eng,

Teaching/research assistant at the University of Split, Faculty of Electrical Engineering, Mechanical Engineering and naval Architecture, Dept. of Production Engineering, Welding Laboratory, 21000 Split, CROATIA

Technician and candidates for Master Degree in Mech. Eng. on FESB with adequate knowledge and experience in related subject.

Day 4 and Day 5

BASICS OF ROBOTIC JOINING TECHNOLOGIES

Robotic Welding Systems, On-line and off-line programming, Welding Sensorics and Control, Arc Welding, Additive Layer Manufacturing, Robotic welding solutions for Laser Beam Welding, Hybrid Laser – Arc Welding, Resistance welding, Friction Stir Welding and Production of Layered Composite Materials.

Presentations of student-trainee's works

Nikša Krnić, Ph. D. Assoc. Prof.

Associated Professor at the University of Split, Faculty of Electrical Engineering, Mechanical Engineering and naval Architecture, Dept. of Production Engineering, Welding Laboratory, 21000 Split, CROATIA

Domagoj Kojundžić, M. Eng. Mech. Eng,

Teaching/research assistant at the University of Split, Faculty of Electrical Engineering, Mechanical Engineering and naval Architecture, Dept. of Production Engineering, Welding Laboratory, 21000 Split, CROATIA

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