



ATHENS – závěrečná zpráva ze studijního programu

Měsíc/rok: 03/2025

Kód a název kurzu: UPM 176 March 2025 Short pulse laser fundamentals and applications

Přijímající univerzita: UPM - Universidad Politécnica de Madrid

Jazyk kurzu: English

Termín konání: 15.3.-22.3.2025

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Doprava:

Mode of transport (+price): bus+airplane

Prague-Vienna FlixBus 485 czk

Vienna-Madrid ryanair 1 660 czk

BACK: Madrid-Vienna Iberia 1 520 czk

Vienna-Brno-Prague StudentAgency+A-bus total 500 czk

Total: 4 165 czk

Local transport: student fare card, must be booked in advance for issuance, card €4

Student monthly fare 8 euros

Total: 12 euros

Ubytování: Shared Airbnb with 3 other Czechs from Athens. Total 9 nights

Total price per person: 5 987 czk

Stravování: Student cafeteria --- 7 eur per meal in lunch time, breakfast in airbnbs, diner in various bars/restaurants

EDA: 25 eur

Výše vašeho stipendia: 9 700 czk

Prosím uveďte v procentech: Obdržené stipendium pokrylo 88 % mých nákladů. Ubytování+doprava+EDA, zhruba 60 % celkových nákladů včetně stravování a doprovodných aktivit s ostatními.

Organizace kurzu:

Monday, March 17, 2025 Escuela Técnica Superior de Ingenieros Industriales

09:00 – 11:00 Basic Principles of Lasers

11:00 – 13:00 Optics Review and Laser Types

14:00 – 16:00 Laser-Matter Interaction

Tuesday, March 18, 2025 Escuela Técnica Superior de Ingenieros Industriales

09:00 – 11:00 Laser Systems

11:00 – 13:00 Laser Applications (Marking, Drilling, Cutting, Welding, Surface Treatments, Cleaning, Texturing, Structuring, Photovoltaics)

14:00 – 16:00 Laser Applications (Additive manufacturing, Biomedicine)

Wednesday, March 19, 2025 Centro Láser - Campus Sur UPM

09:00 – 12:00 Laser Safety + Laser Safety Test

12:00 – 13:00 Laser Center Visit

14:00 – 16:00 Laser Characterization Lab (4 rotating teams)

30 min Laser Power, 30 min Repetition Rate and Laser Pulse Length,

30 min Polarization and Optical Components, 30 min Laser Wavelength

Thursday, March 20, 2025 Centro Láser - Campus Sur UPM

09:00 – 16:00 Laser Processing Labs (4 rotating teams)

1,5 h Laser Texturing, 1,5 h Liu's Method, 1,5 h Laser Micromanufacturing

1,5 h Laser Marking+Process characterization (Optical Microscopy, Confocal

Microscopy, SEM)

Friday, March 21, 2025 Centro Láser - Campus Sur UPM

09:00 – 13:00 4 Teams 1h Bioprinting Lab

1h LIFT of Metallic Pastes and High-Speed Camera

2h Team Work (Presentations + Lab Reports)

14:00 – 16:00 Team Presentation

Volný čas:

The course schedule was really intense, as you can see from timetable... There was almost no free time compared to other courses... Mandatory EDA activities such as night walk, city tour or games in Retiro Park organised by BEST, Visiting Toledo by bus, 1 day trip (bus included in student card month ticket), Having tapas. Unfortunately it was raining most of the time, so we were spending time together having beer+tapas (100 montaditos, probably the cheapest option – like fast food...) Then we went spontaneously to some bars+restaurants. I thing having Paella is a must.

Zhodnocení: It was great experience meeting other people with similar interests, also great opportunity to visit LASER CENTER UPM. The course was well prepared, the organization was really good. All the lectures were led by experts in the field. At the end we have to complete test, presentation and lab reports (lab reports were not compulsory because of the emergency situation we faced with rains). However it was really nice experience working with lasers in their labs. I gain a lot of practical skills and knowledge.