



**10th International Summer School on
Advanced Material Systems (AMS):
Manufacturing – Characterization – Modeling
July 1-5, 2024, Thessaloniki, Greece**

Program

Day 1 – Monday, July 1, 2024

Assembly Room, Building D'-ground floor, School of Engineering

09:30-10:30 Registration

<i>Session I: Opening</i>		
10:30-11:00	Welcome addresses	- Dr. G. Papagiannis, Dean of Engineering AUTH - Dr. G. Savaidis, Head of Mechanical Engineering AUTH - Dr. D. Lagoudas, University Distinguished Professor TAMU
11:00-11:30	Overview / Expectations	Dr. N. Michailidis, Director of the AUTH-TAMU Partnership

<i>Session II: Advanced Materials & Manufacturing</i>		<i>Instructor</i>
11:30-12:10	Shape Memory Materials (SMAs)	Dr. D. Lagoudas
12:10-12:50	Additive Manufacturing of Shape Memory Polymers (SMPs), 3D scaffolds and porous structures	Dr. N. Michailidis
12:50-14:00	Lunch break – Get to know each other reception	
14:00-14:40	Processing and Characterization of Porous Materials	Dr. F. Stergioudi
14:40-15:30	Discussion with students	All instructors

Day 02 – Tuesday, July 2, 2024

Computer Lab, Civil Engineering

<i>Session III: Micromechanics Workshop, hands-on & student projects</i>		<i>Instructor</i>
10:00-11:30	Micromechanics Workshop Part I	Dr. D. Lagoudas
11:30-11:40	Coffee break	
11:40-13:00	Micromechanics Workshop Part II	Dr. G. Chatzigeorgiou
13:00-14:00	Lunch break	

Move to Lab of Experimental Strength of Materials and Structures, Civil Engineering

14:00-15:30	Mechanical and thermomechanical testing of shape memory materials, porous aluminum, polymer lattice structures and CFRP composites	Mr. A. Argyros Mr. A. Chortis Dr. K. Katalalos Dr. F. Stergioudi Dr. N. Michailidis
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Day 03 – Wednesday, July 3, 2024

Computer Lab, Civil Engineering

<i>Session IV: Simulation of Smart Materials & Student projects</i>		<i>Instructor</i>
10:00-10:50	Micromechanics of Ductile Failure	Dr. J. Wilkerson
10:50-11:40	Machine Learning in computational solid mechanics and constitutive modeling	Dr. N. Bouklas
11:40-12:00	Coffee break	
12:00-13:30	Student Projects Assignment, Part I	Dr. G. Chatzigeorgiou Dr. J. Wilkerson Dr. N. Bouklas
13:30-14:30	Lunch break	
14:30-15:30	Student Projects Assignment, Part II	Dr. G. Chatzigeorgiou Dr. J. Wilkerson Dr. N. Bouklas
15:30-...	Students continue working on their Projects	
21:00	Dinner	

Day 04 – Thursday, July 4, 2024

BETA CAE Systems SA, Kato Scholari, Thessaloniki

<i>Session IV: Visit at BETA CAE SYSTEMS for training</i>		<i>Instructor</i>
09:15	Meeting at the entrance of Building D'	
10:30-10:45	BETA CAE Systems, Company & Products	Mr. N. Trakatelis
10:45-11:45	Selected Applications of Machine learning in Simulation results prediction	Mr. K. Rachoutis
11:45-12:30	Machine Learning Optimization and Quick Verification of an Electric Vehicle Rocker Design	Mrs. G. Dimopoulou
12:30-13:30	Lunch break	
13:30-15:00	Pre & Post Processing for FE modeling of Laminated Composite Structures	Mr. S. Tsekouras
15:00-15:15	Coffee break	
15:15-15:45	Extended Reality (XR) and collaboration in CAE world	Ms. S. Avramidou
15:45-16:00	Q/A	
16:00-	Return to AUTH	

Day 05 – Friday, July 5, 2024

Meeting room of the Lab of Experimental Strength of Materials and Structures, Civil Engineering

<i>Session V: Students' evaluation</i>		<i>Instructor</i>
09:00-11:00	Students work on their project presentations	
11:00-11:30	Coffee break	
11:30-13:00	Presentation of Student Projects	All instructors
13:00-13:30	Certificate Awarding Ceremony and Conclusion of the AMS24	All instructors
13:30-15:00	Lunch / Networking session / mini-Party	All instructors
21:00	Dinner	