



10<sup>th</sup> 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

### Session I: Opening

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

### Session II: Advanced Materials & Manufacturing

#### Instructor

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*

### Session III: Micromechanics Workshop, hands-on & student projects

#### Instructor

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. Katakalos 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 &amp; Student projects</i>		<i>Instructor</i>
<b>10:00-10:50</b>	Micromechanics of Ductile Failure	Dr. J. Wilkerson
<b>10:50-11:40</b>	Machine Learning in computational solid mechanics and constitutive modeling	Dr. N. Bouklas
<b>11:40-12:00</b>	Coffee break	
<b>12:00-13:30</b>	Student Projects Assignment, Part I	Dr. G. Chatzigeorgiou Dr. J. Wilkerson Dr. N. Bouklas
<b>13:30-14:30</b>	Lunch break	
<b>14:30-15:30</b>	Student Projects Assignment, Part II	Dr. G. Chatzigeorgiou Dr. J. Wilkerson Dr. N. Bouklas
<b>15:30-...</b>	Students continue working on their Projects	
<b>21:00</b>	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>
<b>09:15</b>	Meeting at the entrance of Building D'	
<b>10:30-10:45</b>	BETA CAE Systems, Company & Products	Mr. N. Trakatelis
<b>10:45-11:45</b>	Selected Applications of Machine learning in Simulation results prediction	Mr. K. Rachoutis
<b>11:45-12:30</b>	Machine Learning Optimization and Quick Verification of an Electric Vehicle Rocker Design	Mrs. G. Dimopoulou
<b>12:30-13:30</b>	Lunch break	
<b>13:30-15:00</b>	Pre & Post Processing for FE modeling of Laminated Composite Structures	Mr. S. Tsekouras
<b>15:00-15:15</b>	Coffee break	
<b>15:15-15:45</b>	Extended Reality (XR) and collaboration in CAE world	Ms. S. Avramidou
<b>15:45-16:00</b>	Q/A	
<b>16:00-</b>	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>
<b>09:00-11:00</b>	Students work on their project presentations	
<b>11:00-11:30</b>	Coffee break	
<b>11:30-13:00</b>	Presentation of Student Projects	All instructors
<b>13:00-13:30</b>	Certificate Awarding Ceremony and Conclusion of the AMS24	All instructors
<b>13:30-15:00</b>	Lunch / Networking session / mini-Party	All instructors