

Global Summer School

Mechanics Exploration and Future Aerospace Vehicles

July 20–31, 2026

Harbin Institute of Technology, Harbin, P.R. China



Contact Information

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General Information

Mechanics serves as a bridge between basic science and future technology. This summer school focuses on the latest advancements in mechanics, particularly in the research, design, and applications of next-generation space vehicles. Participants will gain in-depth knowledge in the fields of integrated design of space structures, dynamics and control, high performance materials for flight missions, and structural health monitoring, through both theoretical instruction and group research projects. This program offers an excellent opportunity for participants to access the frontiers of mechanics research, collaborate on challenging problems, and build a global academic network.

Attendance Requirements

Participants should be at the undergraduate level, with a background in mechanics, aerospace engineering, mechanical engineering, materials science, applied mathematics, or related fields. Proficiency in English is required, though some lectures will be given in Russian or Chinese with translation provided.

Lectures and Talks (Tentative)

The summer school offers three lectures and four seminar talks. Lecturers and speakers are invited from top institutions in Russia, Egypt, and China, including Lomonosov Moscow State University, Helwan University, Chinese Academy of Sciences, Harbin Institute of Technology, and Xiamen University, et al.

Lecturer/Speaker	Institution	Topic (preliminary)	Units (50 mins/unit)
Prof. Marat Dosaev	Lomonosov Moscow State University, Russia	Determining the Control Algorithm Parameters for Inverted Pendulum Stabilisation	8 (lecture)
Prof. Yasser Shabana	Helwan University, Egypt	Advanced Materials and Structures for Space Vehicles	8 (lecture)
Prof. Qing Xinlin	Xiamen University, China	Structural Health Monitoring for Aircraft	2 (talk)
Prof. Song Hengxu	Chinese Academy of Sciences, China	Dislocation Plasticity: Fundamentals and Applications in Contact Mechanics	2 (talk)
Prof. Li,Xiaole	King Abdullah University Of Science And Technology, Saudi Arabia	Evolving Test Methods for Fracture Property Evaluation of Interfaces	2 (talk)
Prof. Hu Shoufeng	AECC Commercial Aircraft Engine Co., Ltd., China	Opportunities and Challenges: Application of Composite Materials in Engines	2 (talk)

Group Research Project

Participants will be divided into teams of 5–8 members to work on a project focused on the structural design and safety assessment of space vehicles using composite materials. Each team will choose from one of four areas: general design of space vehicles, structural dynamics and control, strength and service life computation, or structural health monitoring of space vehicles.

	Week 1 (July 20–25)						Week 2 (July 27–31)					
	Mon	Tue	Wed	Thur	Fri	Sat	Mon	Tue	Wed	Thur	Fri	Sat
M	Opening Ceremony/ Course		Course		Lecture /Campus Tour	Lecture/Campus Tour	Group Research		Group Research		Poster	Closing Ceremony
A	Course		Course				Contest		Seminar		Defense	
	Group Research		Group Research				Group Research		Group Research			

(Registration: July 19, 2026)

Please note that the program schedule is subject to change based on actual circumstances.