Introduction to Medical Science in Space LECTURE

Summer semester 2026, Monday 11:15-12:45, Room: G28-027 (G23-K11 from 15.06.2026)

Date	Topic	Lecturer
13.04.2026	**Introduction**: medical science in space, research areas, questions and technical approaches	Grimm, Wehland
20.04.2026	**Physical basics:** motions, dynamics of mass points, Newton, gravity, equivalence principle, etc.	Stannarius, Harth
27.04.2026	**Platforms for microgravity research I:** rotational bioreactors, drop tower, parabolic flight, sounding rockets (suborbital), ballons	Stannarius, Harth
04.05.2026	**History of space science** (Mercury, Apollo, Vostok, MIR, Skylab etc.	Schulz
11.05.2026	**Platforms for microgravity research II:** satellites, space stations, typical project planning, campaigns, available flight hardware	Puzyrev
18.05.2026	**Cell biology basics:** cells, cell organelles, tissues	Krüger
01.06.2026	**Gravitational biology**: perception of gravity, cell physiology under gravitational stress, gravity experiments with living organisms	Krüger
08.06.2026	**Genetics and epigenetics in microgravity**	Schulz
15.06.2026	**Human physiology under microgravity conditions I**: musculoskeletal system, cardiovascular system, immune system, typical diseases of astronauts	Schulz
22.06.2026	**Human physiology under microgravity conditions II**: "space pharmacology", bed rest studies, exercise in space, human centrifuges	Wehland
29.06.2026	**Tissue engineering** under microgravity conditions, bioprinting in space	Wehland
06.07.2026	**Technological challenges and strategies in human space exploration:** life support systems, space greenhouses, human habitats	Krüger
10.07.2026	**EXAM**	

Last change: 04.05.2026

Introduction to Medical Science in Space EXERCISE

Summer semester 2026, Friday 11:15-12:45, Room: G28-027 (G23-K11 from 19.06.2026)

Date	Topic	Lecturer
10.04.2026	---	
17.04.2026	**Literature seminar organization** **Lab visit, microgravity simulators**	Schulz, Torres MTRM team
24.04.2026	**Physical basics:** motions, dynamics of mass points, Newton, gravity, equivalence principle, etc.	Physics in Space Group
08.05.2026	**Literature seminar I**	Schulz, Torres, Strecker
15.05.2026	**Platforms for microgravity research:** satellites, space stations, typical project planning, campaigns, available flight hardware	Puzyrev
22.05.2026	**Biological systems:** tissues, organs, body systems	Krüger
29.05.2026	**Working with human cells (in microgravity):** cell culture, cell culture environment, microgravity bioreactors, forces and side effects	Krüger
05.06.2026	**Literature seminar II**	Schulz, Torres
12.06.2026	**Artificial intelligence in space research**	Puzyrev
19.06.2026	**Molecular biology, genetic engineering**	Schulz
26.06.2026	**Molecular biology, genetic engineering**	Wehland
03.07.2026	**Life support systems:** technology development for biomedical space research: hardware requirements and tests, technical implementations, student space projects @ OVGU	Krüger, Strecker
10.07.2026	**EXAM**	

Last change: 09.03.2026