Introduction to Medical Science in Space LECTURE

Summer term 2024, Friday 13:15-15:00, Room: G28-027

Date	Topic	Lecturer
12.04.2024	**Introduction to microgravity research**, everyday life in space, ...	Grimm, Wehland
19.04.2024	**History of space science** (Mercury, Apollo, Vostok, MIR, Skylab etc.)	Schulz
26.04.2024	**Physical basics:** motions, dynamics of mass points, Newton, gravity, equivalence principle, etc.	Physics in Space Group
03.05.2024	**Platforms for microgravity research I:** rotational bioreactors, drop tower, parabolic flight, sounding rockets (suborbital), ballons	Schulz
10.05.2024	**Platforms for microgravity research II:** satellites, space stations, typical project planning, campaigns, available flight hardware	Trittel
17.05.2024	**Biological systems**: cells, tissues & more	Krüger
24.05.2024	**Gravitational biology**: perception of gravity, cell physiology under gravitational stress, gravity experiments with living organisms	Krüger
31.05.2024	**Tissue engineering** under microgravity conditions, bioprinting in space	Wehland
07.06.2024	**Human physiology under microgravity conditions I**: musculoskeletal system, cardiovascular system, immune system, typical diseases of astronauts	Schulz, Grimm
14.06.2024	**Human physiology under microgravity conditions II**: "space pharmacology", bed rest studies, exercise in space, human centrifuges, electrostimulation	Wehland
21.06.2024	**Genetics and epigenetics in microgravity**	Schulz
28.06.2024	**Artificial intelligence in space research**	Puzyrev, Schulz, Abdelfattah
05.07.2024	**Technological challenges and strategies in human space exploration:** life support systems, space greenhouses, human habitats	Krüger
12.07.2024	**EXAM**	---

Last change: 08.03.2024

Introduction to Medical Science in Space SEMINAR/EXERCISE

Summer term 2024, Wednesday 17:15-19:00, Room: G28-027

Date	Topic	Lecturer
10.04.2024	**Introduction of space science students**	MTRM team
17.04.2024	**Rotating bioreactors for microgravity research**	Schulz
24.04.2024	**Physical basics:** motions, dynamics of mass points, Newton, gravity, equivalence principle, etc.	Physics in Space Group
08.05.2024	**Literature seminar**	Schulz
15.05.2024	**Platforms for microgravity research:** satellites, space stations, typical project planning, campaigns, available flight hardware	Trittel
22.05.2024	**Working with human cells**	Krüger
29.05.2024	**Cells in rotating bioreactors**	Krüger
05.06.2024	**Spheroids**	Wehland, Schulz
12.06.2024	**Literature seminar**	Schulz, Abdelfattah
19.06.2024	**Molecular biology, genetic engineering, artificial intelligence**	Wehland, Abdelfattah, Puzyrev
26.06.2024	**Molecular biology, genetic engineering**	Schulz, Abdelfattah
03.07.2024	**Life support systems I:** technology development for biomedical space research: hardware requirements and tests, technical implementations	Krüger
10.07.2024	**Life support systems II**	Krüger

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