Time	Monday	Tuesday	Wednesday	Thursday	Friday
10:00-12:00	**Lecture 1:** **The space environment/habitat and its influence on spacecraft design**. Space vacuum, temperature. Effects of weightlessness on materials and people. Fluids and flames in space. Radiation in space. Sources (solar wind and cosmic rays). Space Weather and Solar Storms. UV irradiation. Units of radiation (Gray, Sievert), etc	**Lecture 3:** **Thermal balance.** Temperature control within spacecraft for safe operation of equipment and living conditions for humans. Spacecraft power needs and supply. Solar cells, fuel cells and RTGs.	**Lecture 4:** **Spacecraft protection.** Radiation shielding. The Beer Lambert law and absorption coefficients. Effective shielding materials. Impacts. The risk from micrometeorites and space junk. Examples of impacts on spacecraft. Designs to mitigate and protect from impacts e.g. Whipple shields.	**Lecture 6:** **Space architecture.** Space architecture is the branch of architecture that focuses on the design and construction of structures and habitats for use in space. Design of Space Stations and Lunar Bases. Planned missions to the moon. Challenges of Building and Maintaining a Lunar Base. Construction materials. Lunar regolith as a construction material.	**Exam**
12:00-13:00	Lunch	Lunch	Lunch	Lunch	
13:00-15:00	**Lecture 2:** **Spacecraft Materials.** Revision of the basic properties of materials. Stress/Strain. Thermal and electrical conductivity. Magnetic properties. Selecting materials for space. A brief overview of some of the materials used in spacecraft engineering. Advantages and disadvantages of each	**pm lab tours**	**Lecture 5:** **Living in space.** Humans in space - health issues. Effects of prolonged weightlessness and radiation. Mental Health. Space medicine. Human space exploration. Travelling to the Moon and Mars.	**Lecture 7.** **Space agriculture**. Food and nutrition for astronauts. Growing your own food in space habitats. Hydroponics. Space farming on the moon (and Mars)	