

SPACE TECHNOLOGY

We are in the golden era of Space Exploration right now! Right from building recyclable space rockets to enabling space tourism for laymen, Earthlings are now set off to becoming multi-planetary beings. Enroll in this course to unravel the mysteries of Space. You will learn to build 3D models and simulations of the functionalities, based on the concepts of space and the technology that is used for it. This course offers exposure to Tech-driven projects in 3D.

SESSION	CONCEPT	SKILLS
01	Earth & Beyond - I	Exploration, Observation Exploring the difference between sky and space. Contemplating on the concept of Space-Tech. Introduction to some of the common Space terminologies. Observing Earth from the Space.
02	Earth & Beyond - II	Exploration, Observation, Creativity Exploring the 3D tech environment -TinkerCAD.
03	Revisiting Roblox & Lua Scripting - I	Exploration, Spatial Visualization Cyber security, Software Set-up, Getting familiar to the 3D Game designing platform.
04	Revisiting Roblox & Lua Scripting - II	Creativity, Spatial Visualization Putting 3D parts together to build an obstacle course.
05	Revisiting Roblox & Lua Scripting - III	Creativity, Logic How to code using Lua programming language : Loops, Functions, Variables.
06	Our Solar System - I	Exploration, Observation, Creativity Learning about genesis of Earth and the universe. Exploring the home-galaxy and solar system. Building 3D Solar System Model in Roblox.
07	Our Solar System - II	Logic, Creativity Understanding about Rotation & Revolution of planets and building Planetary Orbit using Euler's Concept by Lua Scripting.



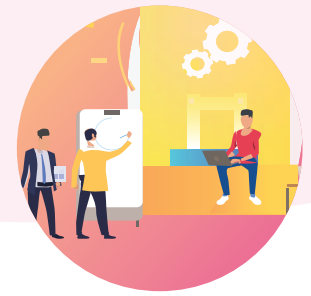
08	Our Solar System - III	Logic, Creativity Understanding of Orbital Speed of different planets and stimulating the concept in the 3D Model(Solar System).
09	Our Solar System - IV	Logic, Creativity Understanding the concept of gravity, comparing gravities of different planets and building 3D model that represents gravitational pull on each planet by Lua Scripting.
10	The Moon: Always On The Move - I	Exploration, Observation, Creativity How did the Moon come into existence? Why does moon change its shape every night ? Creating simulation of Moon Phases 3D model in Roblox.
11	The Moon: Always On The Move - II	Logic, Creativity Completing 3D Model of Moon Phases(Lua Scripting).
12	Shadow & Eclipses - I	Exploration, Observation , Creativity, Logic Understanding the formation of Shadows and Eclipses,Umbra & Penumbra. Building 3D Model of Partial Solar Eclipse(Roblox).
13	Shadow & Eclipses - II	Exploration, Observation , Creativity, Logic Building an Annular Solar Eclipse 3D Model (Roblox).
14	Shadow & Eclipses - III	Exploration, Observation , Creativity, Logic Formation of Red Moon on Lunar Eclipse. Building 3D Model of Lunar Eclipse.



15	The Auroras: Fire In The Sky!	Exploration, Observation , Creativity, Logic Understand the formation of Aurora in the Northern & Southern Hemisphere. Building Simulation of Auroras in Roblox.
16	Space Rocks - I	Exploration, Observation , Creativity, Logic Learning about the difference between Meteors, Comets and Asteroid. Building 3D Model of a Space Rock in Roblox.
17	Space Rocks - II	Logic, Creativity Journey of a Meteoroid: Simulation in Roblox.
18	Formative Assessment	Assessment Of Learning
19	Key To Space~ Rocket - I	Exploration, Observation , Creativity Logic What are Rockets?Case Study: Successful launch of the Rocket!
20	Key To Space~ Rocket - II	Logic, Creativity Building 3D Model of Rockets, Design Propulsion System of the Rocket.
21	Guidance Navigation And Control System	Exploration, Observation, Creativity Understanding and building Guidance Navigation and Control System.
22	Payload Mass Of The Rocket & Escape Tower - I	Exploration, Observation, Creativity, Logic Understanding Payload System and Launch Escape System of the rocket.
23	Payload Mass Of The Rocket & Escape Tower - II	Exploration, Observation, Creativity, Logic Building Payload System and Launch Escape System of the rocket.

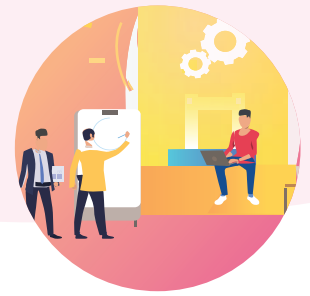


24	Staging In Rockets - I	Exploration, Observation , Creativity, Logic Understanding the staging and it's type of Rocket when it is launched.
25	Staging In Rockets - II	Exploration, Observation , Creativity, Logic Creating elements of Rocket Staging.
26	Reaching Into Space - I	Exploration, Observation, Creativity Exploring questions : What is Gravity Turn? What happens if the rocket moves straight upwards without getting tilted?
27	Reaching Into Space - II	Exploration, Observation, Creativity Launching a Rocket to Space : 3D Model (Stimulation).
28	Communication And Satellites	Exploration, Observation, Creativity Satellite Model Research and 3D Model building.
29	Magic Of Telescopes	Logic, Creativity Learning all about telescopes - Invention, Use, Types , 3D Prototyping.
30	Life At The International Space Station - I	Logic, Creativity Learn everything about how astronauts live in space and we will look at the structure of the International Space Station. Examine the different modules of the Station as well as the astronaut transportation spacecraft "Soyuz". Create a Paper Map of ISS.
31	Life At The International Space Station - II	Logic, Creativity Become a real space mechanic, learn about the structure of the space stations and design your own.(3D Model in Roblox).



32	Life At The International Space Station - III	Logic, Creativity Design your own space station with all the necessary modules to be able to conduct a full of value scientific research - I.
33	Life At The International Space Station - IV	Logic, Creativity Design your own space station with all the necessary modules to be able to conduct a full of value scientific research - II.
34	Our Cosmic Neighbor Mars - I	Exploration, Observation, Creativity Mars scale model from up close, a Martian crater, a Martian rover and an example of the scientific process which rovers use to examine the Martian surface for life.
35	Our Cosmic Neighbor Mars - II	Logic, Creativity Create the first human city on Mars. Build its own base on the surface of Mars having in mind everything they've learned from habitats and launch pads to the solar farms and roads.
36	Our Cosmic Neighbor Mars - III	Exploration, Observation, Creativity Create the first human city on Mars. Build its own base on the surface of Mars having in mind everything they've learned from habitats and launch pads to the solar farms and roads.
37	Design A Mission Patch - I	Exploration, Observation, Creativity Understanding the Artemis missions to return humans to the surface of the Moon.
38	Design A Mission Patch - II	Logic, Creativity Apply coding concepts such as drawing Actors, direction and turning, simple/advanced motion, visibility, resizing Actors, graphic effects, simple events, and input/output.

Learning Path For YOUNG LEARNERS



39	Design A Mission Patch - III	Logic, Creativity Understanding Lunar Gateway and Artemis lunar exploration program.
40	Design A Mission Patch - IV	Logic, Creativity Apply coding concepts and code blocks to create a Tell Your Lunar Gateway Story project.