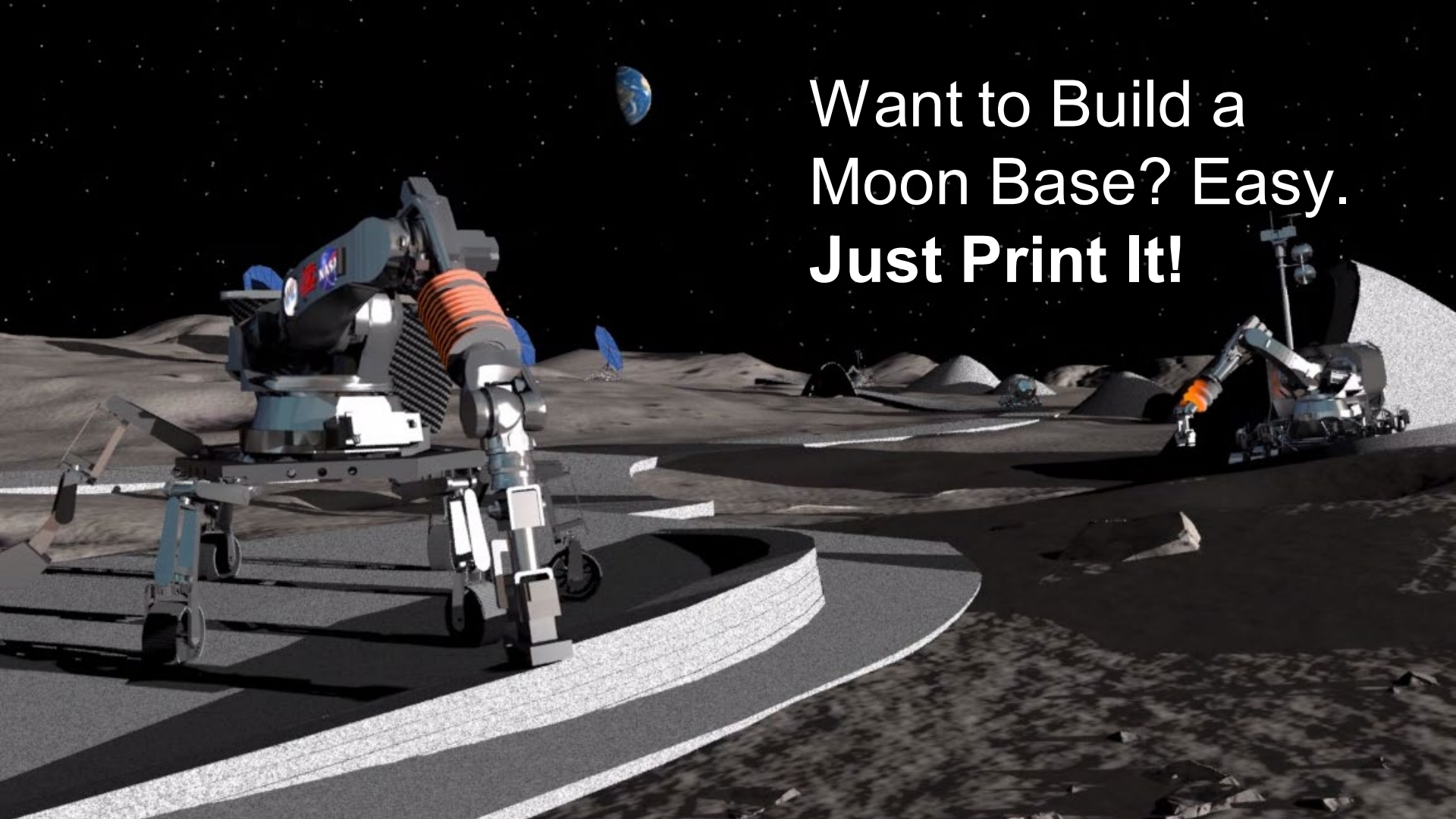


LUNAR BASE 3D PRINTING ROBOT



[GitHub](#)

Want to Build a
Moon Base? Easy.
Just Print It!

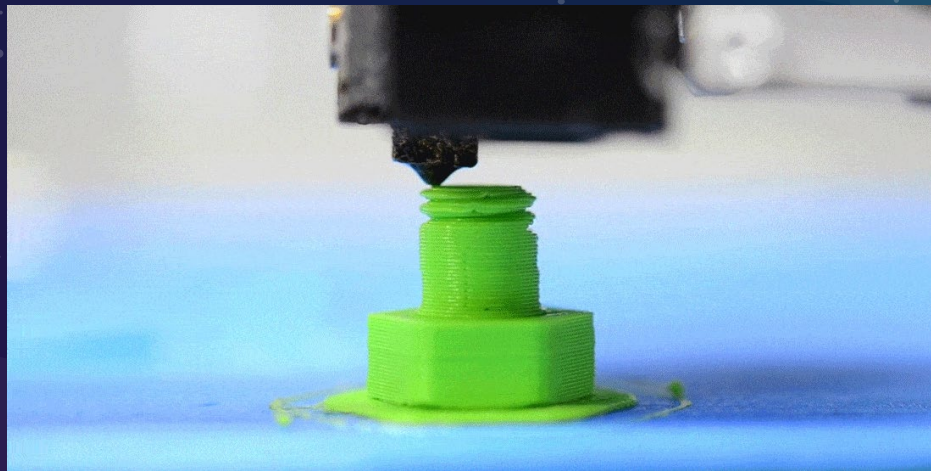
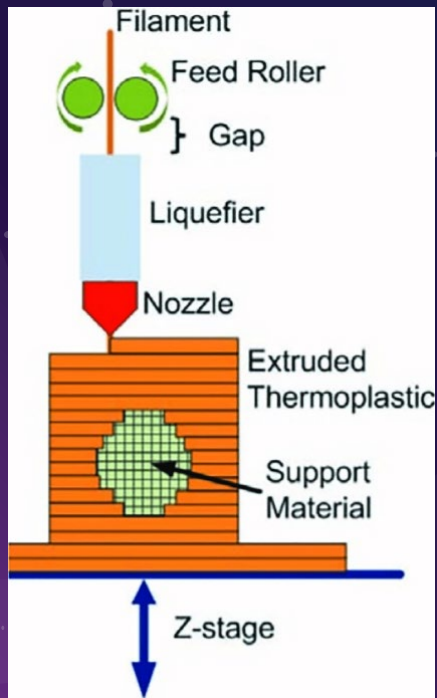


The background is a deep blue and purple space scene. In the top left, there's a large planet with horizontal stripes. Below it is a smaller planet with a ring. In the top right, an astronaut in a white suit is floating, holding a long, thin, looping rope. In the bottom right, there's a cratered moon. The background is filled with numerous small white stars and larger, four-pointed starburst shapes. There are also some soft, wavy, light blue and purple shapes that look like nebulae or gas clouds.

1. PROJECT OVERVIEW

3D printing Concept

HOW A 3D PRINTER WORKS

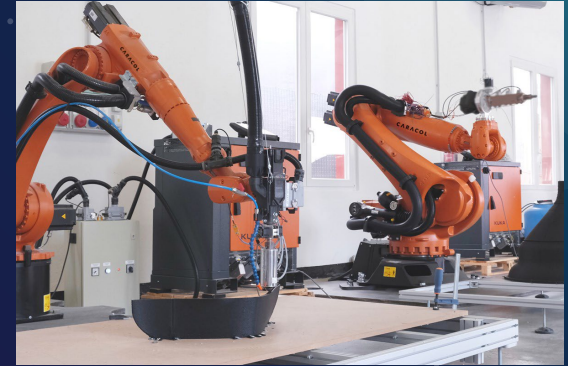
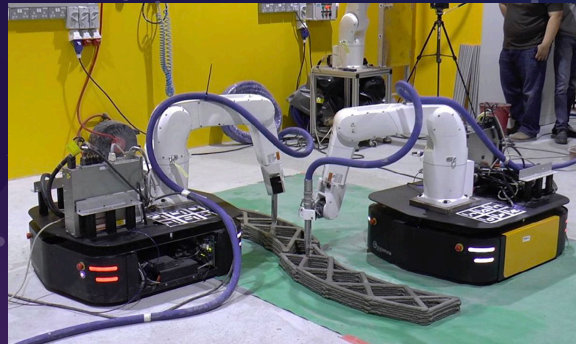


DIFFERENT TYPES OF 3D PRINTING ROBOTS



Large scale Robotic
3D Printed Furniture

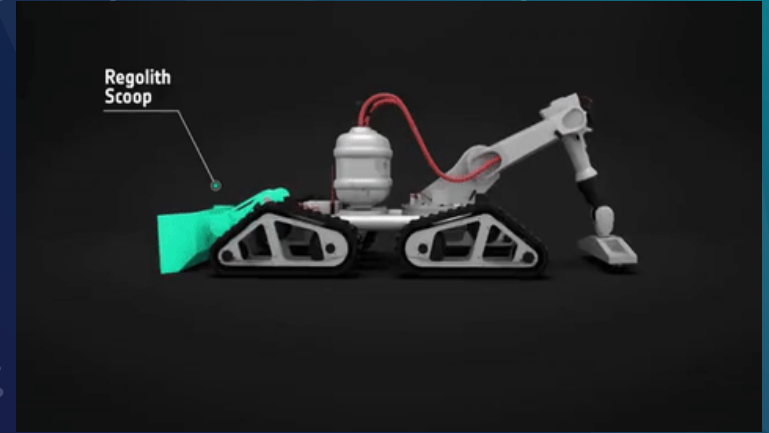
Mobile Robots 'Swarm Print'
3D large scale structures



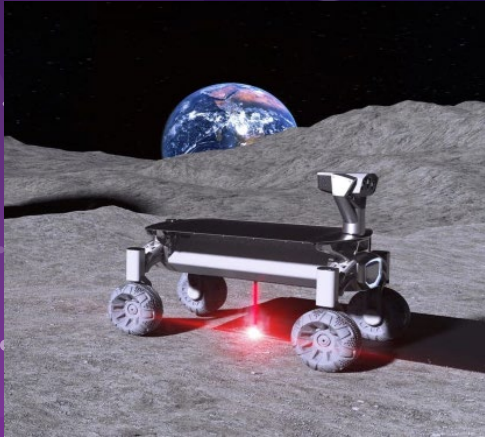
KUKA 3D Printing
technology used to
manufacture large scale
pieces



Project Olympus-NASA



3D Print Robot-ESA

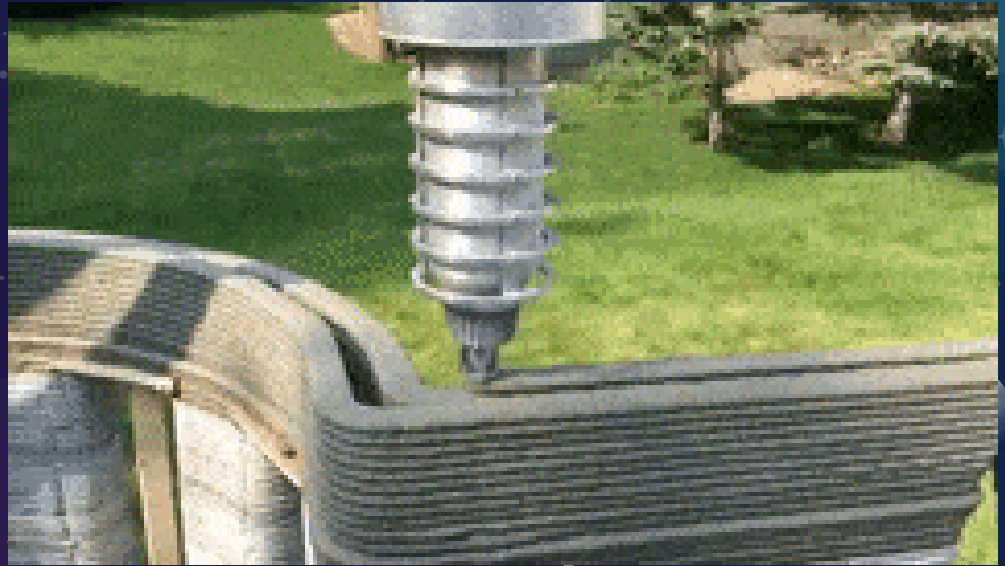


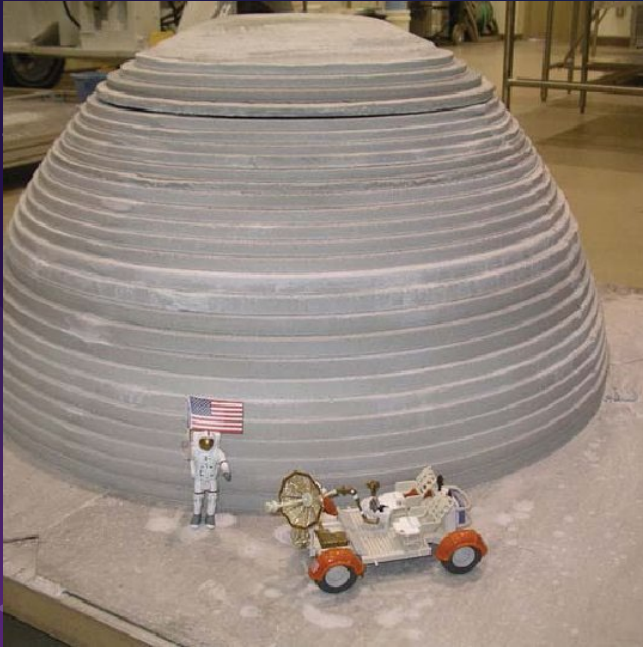
PROJECT MOONRISE:

This technique involves using a laser to turn a very small amount of energy into heat that can melt and fuse together grains of regolith to form a thin but solid slice of the material. By repeating this process multiple times and adding more layers in sequence, we can eventually build a three-dimensional object.

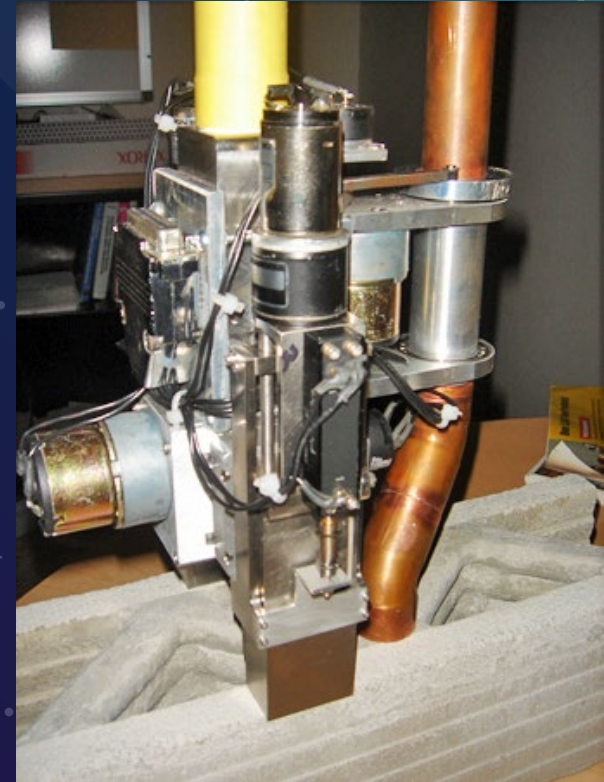
CONTOUR CRAFTING TECHNOLOGY

The basic CC technology, works using layering of paste material extruded through a nozzle which is maneuvered by a gantry or a mobile robot. Automated building technology such as Contour Crafting is critical to improving astronaut safety in construction scenarios.



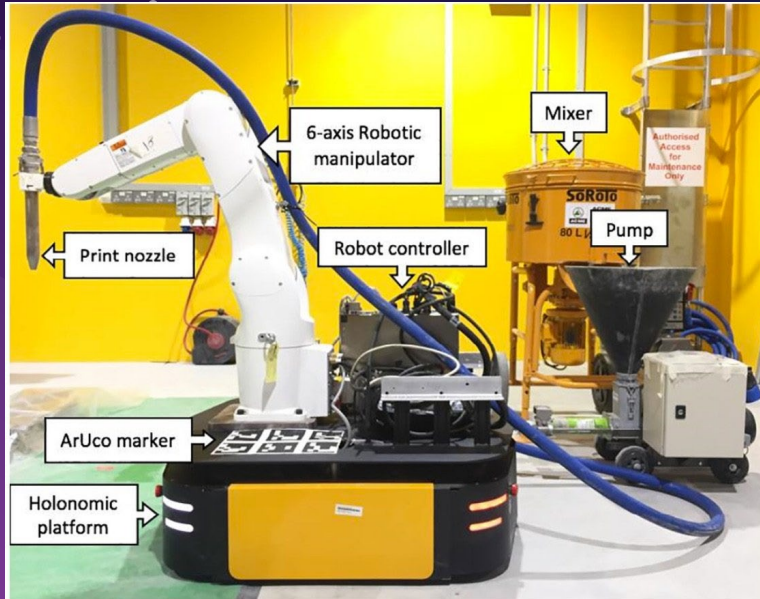


Prototype of Lunar Dome
structure printed with CC
technology

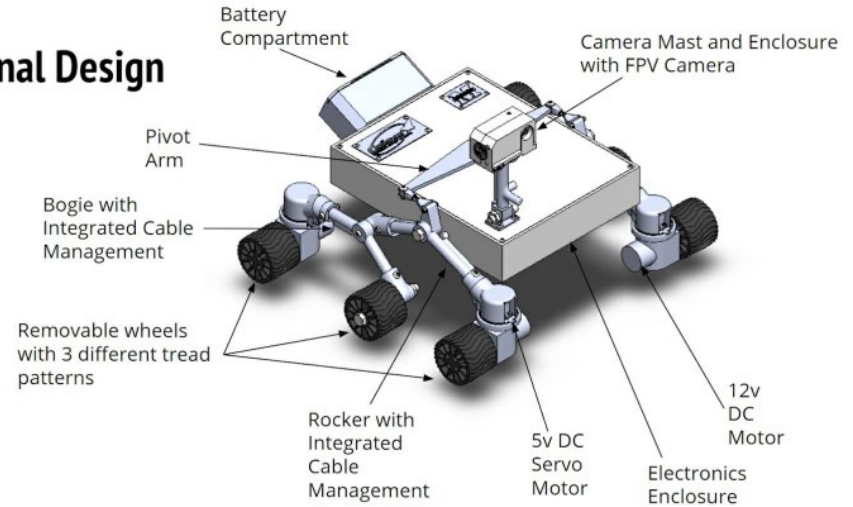


CC nozzle with co-extrusion
building walls with corrugated
fill

ROBOT FEATURES



Final Design



3D MODELING & SIMULATION TOOLS



3D Modeling



Simulation Engines

The background is a deep purple and blue space scene. In the top left, there's a large planet with horizontal stripes. Below it is a smaller planet with a ring. In the top right, an astronaut in a white suit is floating, holding a long, thin, looping rope. In the bottom right, there's a large, cratered moon. The entire scene is filled with numerous small white stars and larger, four-pointed starburst shapes. There are also some soft, wavy, light-colored shapes in the background, possibly representing nebulae or gas clouds.

2.

ROADMAP

Timeline & Tasks

ROADMAP

Getting Started

1

Meeting 3: Robot simulation environment

3

Continue with improving the prototype

5

Meeting 2: 3D model

2

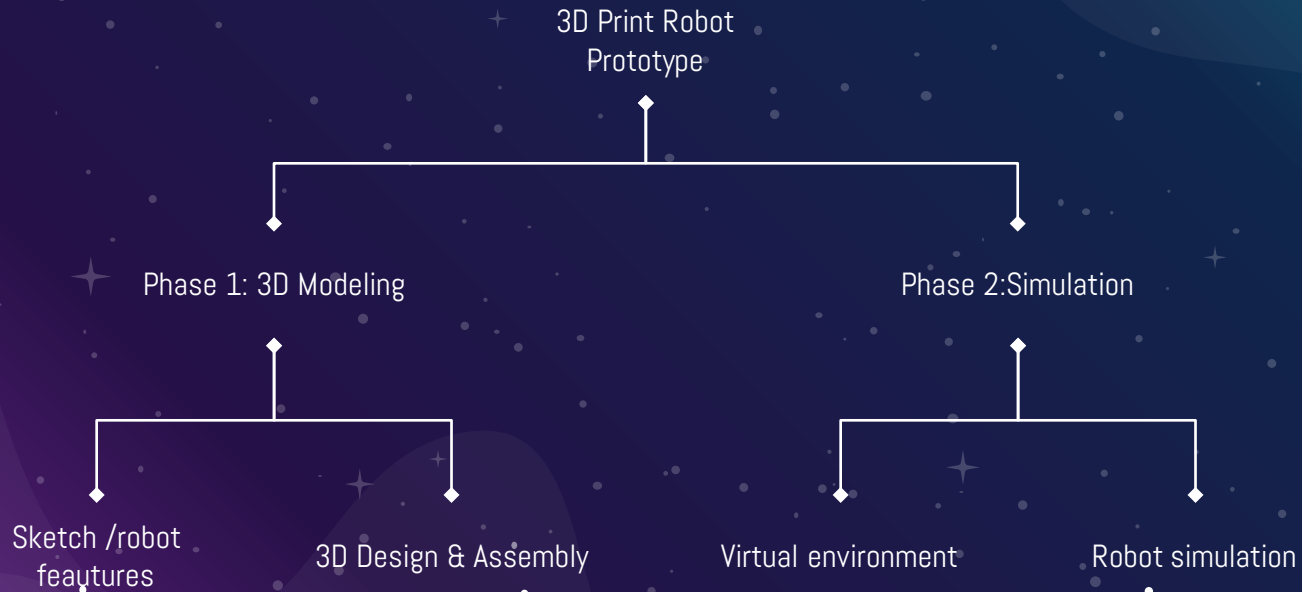
August 22nd: Project Poster deadline

4

August 26th: AJCC

6

GETTING STARTED



TASK DISTRIBUTION

	Week 1							Week 2						
	15 AUG	16 AUG	17 AUG	18 AUG	19 AUG	20 AUG	21 AUG	22 AUG	23 AUG	24 AUG	25 AUG	26	-	-
Task 1: Robot sketch														
Task 2: Robot Features														
Task 3: Base Assembly														
Task 4: Arm Assembly														
Task 5: Virtual Environment														
Task 6: Robot Simulation														
Task 7:														
Task 8														



THANKS!

ANY QUESTIONS?



WEEKLY PLANNER

	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
09:00 - 09:45	Task	Task	Task	Task	Task	Task	Task
10:00 - 10:45	Task	Task	Task	Task	Task	Task	Task
11:00 - 11:45	Task	Task	Task	Task	Task	Task	Task
12:00 - 13:15	✓ Free time	✓ Free time	✓ Free time	✓ Free time	✓ Free time	✓ Free time	✓ Free time
13:30 - 14:15	Task	Task	Task	Task	Task	Task	Task
14:30 - 15:15	Task	Task	Task	Task	Task	Task	Task
15:30 - 16:15	Task	Task	Task	Task	Task	Task	Task