



ABB Robotics



Industrial Internship Program
on
Additive Manufacturing Technologies
for
Engineering Students

Knowledge Partner



The Aeronautical Society of India
Bangalore Branch

Course Structure

SI No	Topic Covered	Delivery Method
C01	<ul style="list-style-type: none">ASTM Classification and Standards for 3DP technologiesFunctionalities of Industrial Additive Manufacturing (3DP Technologies)Extrusion Technology (Fused Filament Fabrication);Vat Polymerisation; Binder Jetting andMicro Diffusion Method	<p>The courses are covered through a mixture of –</p> <p>(a) Practical (Hands-on sessions at AMS India Laboratories</p> <p>(b) Tutorials</p> <p>(c) Online Course Sessions</p> <p>(d) Micro Projects</p> <p>(e) Mentored Sessions with Domain Experts</p> <p>(f) Industry certification session (ABB Certification and AESI Certification)</p> <p>(g) C01 to C05 will be covered in online mode. C06 to C07 will be covered through in plant</p>
C02	<ul style="list-style-type: none">CAD data preparation for Additive Manufacturing, Build methods on part orientation, support generation, model slicing, shrinkage compensation and tool path generationPractical demonstration on aeronautical, automotive and healthcare parts	
C03	<ul style="list-style-type: none">Additive Manufacturing Materials – Polymers, Bioinks, Composites and MetalsAshby Diagram and Criterion for choosing right materials and geometries for design Optimisation and light-weight engineering – Examples of Aerial Vehicles and Electric Vehicles	
C04	<ul style="list-style-type: none">Design for Additive Manufacturing – Process specific, geometry specific and material specific considerations	
C05	<ul style="list-style-type: none">3D Printing to 4D Printing – Research and Innovation Trends – Creating Startups and Obtaining financial support from various sourcesFunctional Issues and Skilling needs in Additive Manufacturing – Post processing, surface finishing and recycling	
<p>Co6 - Plant Visit and In-plant Training – 3 days at Mechanical Services India Plant in Bangalore, Working on Systems, DFAM Projects, Part Building, Post processing and Real-world Project</p> <p>CO7 – In- plant technology demonstration of Additive Manufacturing and Industry 4.0 – Sensors, Machine Learning and Process Monitoring</p> <p>CO8 - Practical demonstration on prototyping of satellite parts and medical parts</p>		

About The Internship:

This course gives basic knowledge of Additive Manufacturing, various technology in Additive Manufacturing, Familiarization of printer components, Familiarization of Material used in Additive Manufacturing, Working on 3D printer with example models.

Smart Objectives:

- Acquire knowledge of trending technology in 3D printing.
- Recognize the basic components & Material of 3D printer
- Understand working of 3D printer
- Understand what is slicing, G-code, Various printing parameter

Coaching

Live discussion every day for peer-to-peer doubt resolution

Format

Self-paced recorded sessions with offline visits to AMS India Lab for practical sessions

Mentorship

Live interactive sessions with leading faculty covering curriculum

Practical Learning

Hands-on exercises and assessments at regular intervals to test concept understanding and retention

Student Support

Your mentor will help personalise your learning experience by periodically engaging with you to ensure you are on track with upcoming deadlines, offer guidance, resolve non-academic queries and lend a helping hand wherever required. However, in case you need to approach us, you can contact our Student Support Team is available 7 days a week from 09 AM to 06 PM IST



Duration
1 week



Course Fee
Rs 10,000 + GST



Eligibility
Students From Any Branch Of Engineering

Hyrel3D Additive Manufacturing Machine

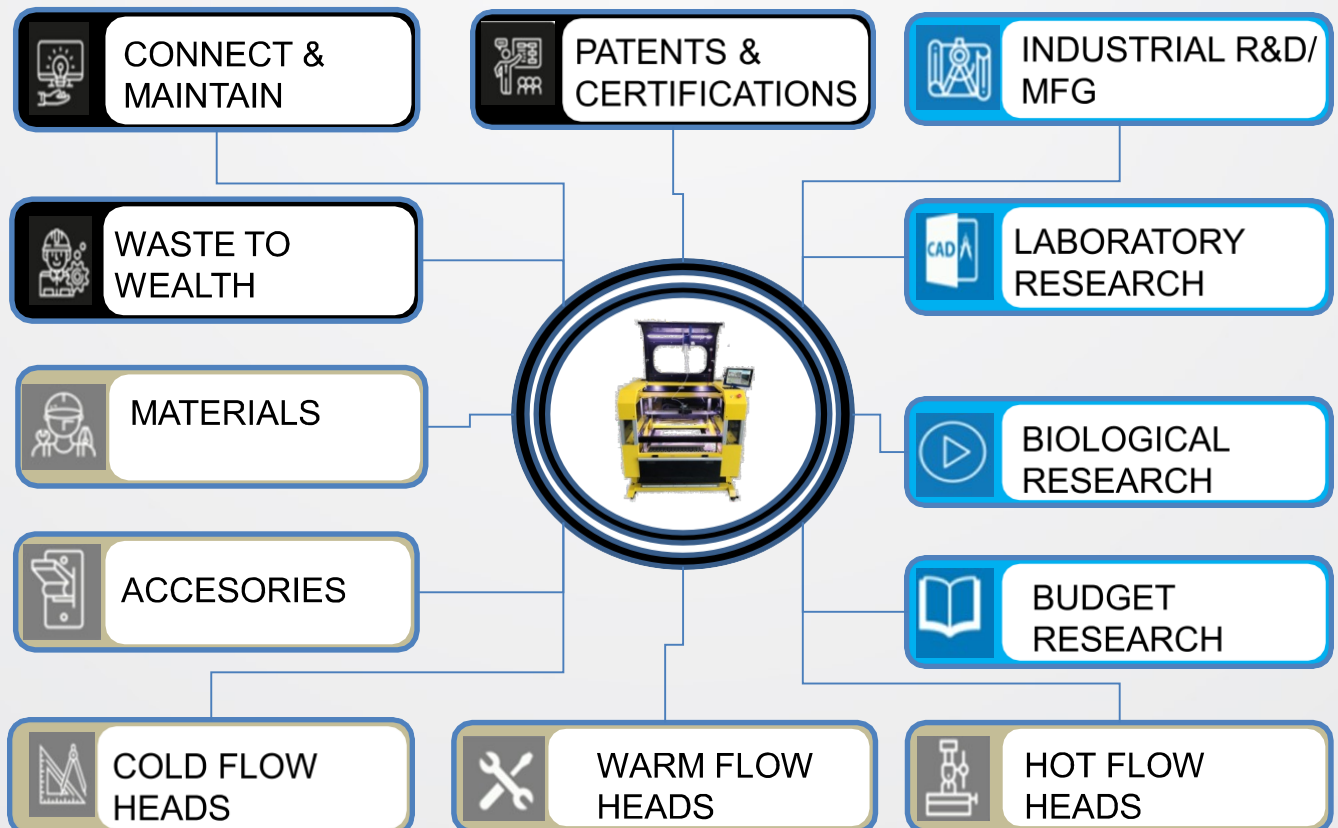


ABB ROBOTIC 3D PRINTING



SOFTWARE TOOLS & CERTIFICATIONS

Software tools and certification of the following are made available to the students undergoing internship



INDUSTRIAL 3D PRINTERS OF ADVANCE MECHANICAL SERVICES PVT LTD

HYDRA-16AS



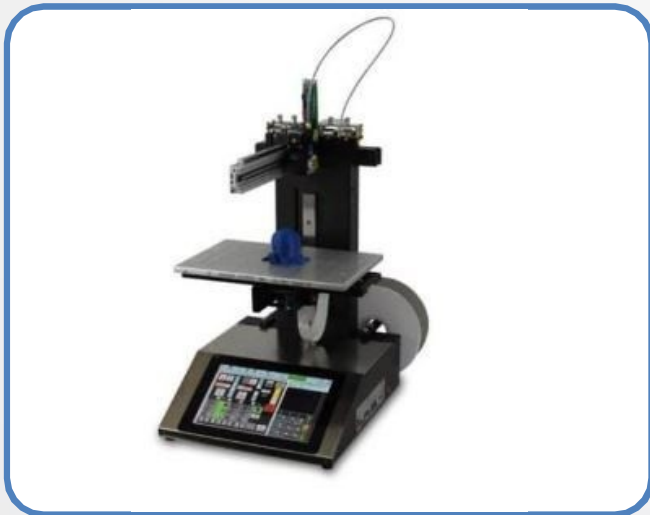
Designation	Hydra16A Freestanding	
Models	16ASHydra Standard	16ATHydra Tall
Target Users	Industrial Research	
Placement Mechanism	Freestanding (Floor) Model Gantry Design	
Exterior Dimensions, XxYxZ (closed)	48x35x50 in 120x88x125 cm	48x35x60 in 120x88x153 cm

SYSTEM-30M



Designation	System 30M	
Target Users	Laboratory Research	
Placement Mechanism	Benchtop Design with Knee design	
Bed Size	200x200x200mm at 75 Degrees	8x8x8inch at 75 Degrees

ENGINE SR



Designation	Engine SR - (Standard Resolution)	
Target Users	Laboratory Research	
Motor	0.9 Degree Stepping Motor	
Bed Size	100x100x100 mm at 75 Degrees	4x4x4inch at 75 Degrees

Engine HR



Designation	Engine HR - (High Resolution)	
Target Users	Biological Research	
Bed Size	200x200x200mm at 75 Degrees	8x8x8inch at 75 Degrees

DEVELOPMENTAL & PRINTING ACTIVITIES



Customer	ADA/BMS
Component Size	400X55X2 mm
Material	Onyx/Nylon + CF
Machine	Markforged



Customer	VSSC (ISRO)
Component Size	150X55X2 mm
Material	PSU / CF+PEEK
Machine	AMS-HYREL



Customer	
Component Size	13x2 mm
Material	Graphene + metal powders
Machine	Ball mill



Customer	VSSC (ISRO)
Component Size	2,4 & 6 mm cells 30x30
Material	PP
Machine	AMS-HYREL



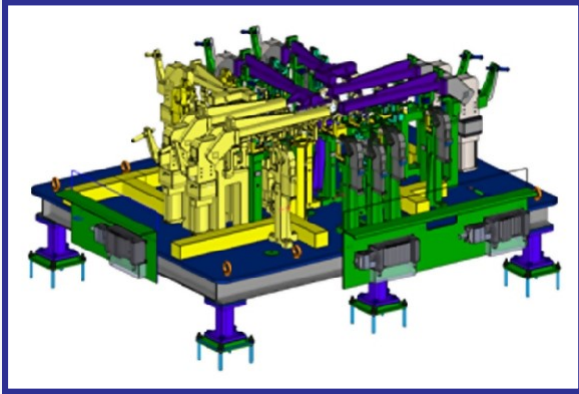
Customer	VSSC (ISRO)
Component Size	210X150X2 mm
Material	Resin
Machine	Form Labs



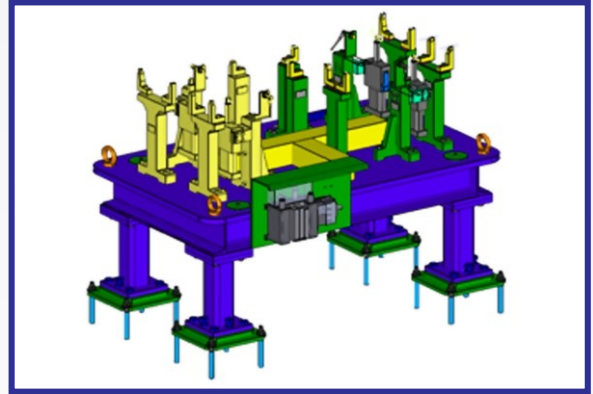
Customer	VSSC (ISRO)
ASTM	D638
Material	CF+PEEK
Machine	AMS-HYREL

BIW Fixture Design by Advance Mechanical Services Pvt Ltd

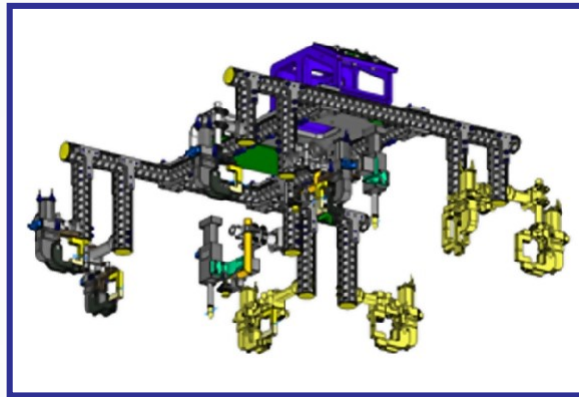
GEO STATION FOR FRONT FLOOR - UNDERBODY



DEPOSIT STATION FOR FRONT FLOOR - UNDERBODY



DEPOSIT STATION FOR FRONT FLOOR - UNDERBODY



Sachin Gota
Dy.General Manager
E-mail : sachin.gota@ams-india.co.in
Mobile No: +91 99011 11899

www.ams-india.co.in
www.hyrel3d.in
www.simple-iot.net

Advance Mechanical Services Pvt. Ltd.,
108 E, First Floor, SRS Road, III Phase,
Peenya Industrial Area,
Bangalore - 560058



SCAN FOR INFORMATION

