

**Prayas Centre Name** Ahmedabad University Support Foundation (VentureStudio)

**City** Ahmedabad

**State** Gujarat

**Fablab Page Link** <https://ahduni.edu.in/academics/schools-centres/venturestudio/facilities/>

### Equipment available at VentureStudio DST PRAYAS SHALA

Section		Prototyping Facility
Sr. No.	Equipment Name	Equipment detail
1	Pcb Prototyping Machine	<p><b>Brand</b> - MITS</p> <p><b>Model</b> - Autolab</p> <p><b>Specification</b> - Spindle Speed : 62000 RPM ,width Line &amp; Space : 0.1 mm, Working area (X/Y/Z) : 229 x 300 x 45 mm,Drilling : 0.2 - 3.175 mm,Maximum thickness of processed material : 30 mm</p> <p>Tool Change : Automatic/10, Camera System : Standard 30x</p> <p><b>Material Support</b> : FR-4 board, Paper phenol, Teflon, Strontium titanate, aluminium, and acrylic</p> <p><b>Operational area</b> - PCBs can be produced within the lab, A single machine can be used for milling, drilling and cutting the PCB.</p> <p><b>Link of the user manual</b> - <a href="#">mdp_autolab_en.pdf</a></p> <p><b>Link for more Information</b> - <a href="#">MITS</a></p>
2	dSpace (Advanced Control Education Kit)	<p><b>Brand</b> - dSpace</p> <p><b>Model</b> - ACE_MLBX_1302T (MicroLabBox - Top Panel Variant with BNC connectors)</p> <p><b>Specification</b> - Dual - core real-time processor at 2 GHz, User - programmable FPGA, More than 100 channels of high - performance I/O, Ethernet and CAN bus interfaces</p> <p><b>Operational area</b> - The dSpace lets you set up your control, test or measurement applications quickly and easily, and helps you turn your new control concepts into reality. The dSpace system is very easy to integrate in Simulink and the generation of the code for its processor can be started directly in Matlab.MicroLabBox can be used in mechatronic research and development areas, such as robotics, medical engineering, electric drives control, renewable energy, vehicle engineering or aerospace.</p> <p><b>Link of the user manual</b> - <a href="#">dSPACE MicroLabBox Product information 2018-06 English.pdf</a></p> <p><b>Link for more Information</b> - <a href="#">dSpace</a></p>
3	CSMD Control simulator Module- Dual software	<p><b>Brand</b> - Haas</p> <p><b>Model</b> - VF</p> <p><b>Specification</b> - CSMD control Dual software for Milling and Turning,Built - in USB, Ethernet, and WiFi connectivity, Haas Visual Programming System</p> <p><b>Operational Area</b> - The Haas Next Generation Control (NGC) Simulator is perfect for classroom training and on - site control demonstrations. Teach programming and machine operation using a real, full-function Haas control panel and keypad. Includes simulated graphic dry run, tool length measurement, work offsets, true</p>

		DNC, and the Haas Visual Programming System. The NGC simulator also can be mirrored on a computer or mobile device, and projected for classroom display. <b>Link for user manual - <a href="#">96-8200C Mill.pdf</a> <a href="#">96-8900C Lathe.pdf</a></b>
--	--	--

Section Metalworking Facility		
4	CNC Milling	<p><b>Brand</b> - Hass  <b>Model</b> - VF2  <b>Specification</b> - 3 Axis machining center, Working area: X axis -762mm,Y axis - 406mm, Z axis - 506mm with 20 turret and Spindle RPM - 10000 max  <b>Operational area</b> - Facing, Pocket milling , 3D Path milling in 3 Axis,Drilling, Tapping , internal and external threading, End mills operations.  <b>Material Support</b> - Metal  <b>Link of the user manual</b> - <a href="#">Hass VMC User manual</a></p>
5	Die sink EDM machine	<p><b>Brand</b> - Sparkonix  <b>Model</b> - S35 Micro  <b>Specification</b> - Work tank : 800 x 500 x 325 mm, Work table : 550 x 350 mm  Travel : X - 300, Y - 200, Z - 200, Max Job weight : 300Kg, Max Job Height - 275mm  <b>Operation area</b> - EDM is the powerful non - conventional machining technique with ability to machine any conductive material, Useful to machining complex geometry parts specially in die mold as well as general machining.  <b>Material Support</b> - Any conductive and Hard metals  <b>Link for more Information</b> - <a href="#">Sparkonix</a></p>
6	Manual Surface Grinder	<p><b>Brand</b> - Bhavya Machine tools  <b>Model</b> - M 7125  <b>Specification</b> - Grinding capacity-500x250x350 mm, Max. Distance From the spindle center to the worktable Surface - 430mm,Safety Load of Bench (in max.) - 100 Kg, Spindle Motor - 1.1 Kw  <b>Operation area</b> - Surface grinding is the abrasive machining process to smooth and polish the surface of metal for better Surface roughness (Ra Value). and high accuracy of shape and dimension.  <b>Link of the user manual</b> - <a href="#">SOP-Manual Surface Grinding Machine</a></p>
7	Portable Gas Welding	<p><b>Brand</b> - Yogi Techno weld  <b>Model</b> - HMP  <b>Specification</b> - Portable Oxy - acetylene Gas welding unit with Cutting torch upto 50 mm and Welding and brazing Torch.  <b>Operation area</b> - Cutting and Welding metals  <b>Material Support</b> - Metal</p>
8	Arc welding	<p><b>Brand</b> - Relon  <b>Model</b> - Arc 400 inverter welding machine  <b>Specification</b> - Input Voltage: AC380V ± 15% (3 phases), 50/60Hz ,Rated Input Current (A) : 35, Output Current Range (A) : 50 ~ 630 ARC , Force Current Range (A) : 0 ~ 135 , Rated Output Voltage (V) : 44, Duty Cycle (%) : 60 , No - Load Voltage (V) : 76 ,No-Load Loss (W) : 200, Efficiency (%) : 85, Power factor : 0.93, Insulation class : F ,Protection class : IP21, Weight (kg) : 54, Dimensions (mm) : 685×302×660  <b>Operation area</b> - Welding  <b>Material Support</b> - Metal</p>

Section	Electronics Facility	
9	Nvidia Jetson TX2 Developer Kit	<p><b>Brand</b> - Nvidia  <b>Model</b> - Jetson TX2 Developer Kit  <b>Specification</b> - NVIDIA Pascal™ Architecture GPU, 2 Denver 64-bit CPUs + Quad - Core A57 Complex, 8 GB L128 bit DDR4 Memory, 32 GB eMMC 5.1 Flash Storage, Connectivity to 802.11ac Wi - Fi and Bluetooth - Enabled Devices  10/100/1000BASE - T Ethernet  <b>Operation area</b> - Artificial Intelligence, deep learning, computer vision, GPU computing, multimedia processing, and much more.  <b>Link of the user manual</b> - <a href="#">Jetson TX2 Development Kit</a>  <b>Link for more Information</b> - <a href="#">Nvidia</a></p>
10	Inforce SYS6601 Development kit	<p><b>Brand</b> - Inforce Computing  <b>Model</b> - SYS6601 - 05 - P3  <b>Specification</b> - Quad core Kryo CPUs ,Adreno 530 GPU, Hexagon 680 DSP, Dual Spectra Image Signal Processors (ISPs), Complete 4K60 encode/decode system, Dual MIPI - DSI (4 - lane) and touch screen capability, Trio of MIPI - CSI (3x4 - lane)  <b>Operation area</b>- Advanced Embedded Systems development such as High-end industrial IoT systems, Advanced portable and connected medical systems , Next - gen augmented and virtual reality, Video analytics, computer vision, etc  <b>Link for more Information</b> - <a href="#">Inforce Computing</a></p>
11	Digital Storage Oscilloscope	<p><b>Brand</b> - Good Will Instrument  <b>Model</b> - GDS2072A  <b>Specification</b> - Bandwidth : 70 MHz, Sample rate : 2 GS/s, Channels : 2, Record length : 2M Points, Logic Analyser  <b>Operation area</b> - Test &amp; Measurement, Embedded Design &amp; Development, Maintenance &amp; Repair  <b>Link of the user manual</b> - <a href="#">GDS 2072 A</a></p>
12	Soldering & Desoldering Station	<p><b>Brand</b> - Metcal  <b>Model</b> - MFR 1351  <b>Specification</b> - SmartHeat®-Technology that makes through-hole Soldering/desoldering easy and keeps your products safe from board damage, Output Power : 60 W,  <b>Operation area</b> - Soldering &amp; Desoldering  <b>Link for more Information</b> - <a href="#">Metcal</a></p>
13	Fluid Dispenser	<p><b>Brand</b> - Metcal  <b>Model</b> - DX250  <b>Specification</b> - Operating Pressure:0 - 6.9 bar (0 - 100 psi), Timing Range: 0.020 - 60 seconds  <b>Operation area</b>- Where accurate and repeatable micro-air fluid dispensing is used such as Electronics assembly, etc  <b>Link for more Information</b> - <a href="#">Metcal</a></p>
14	Modular Rework System, Advanced	<p><b>Brand</b> - Metcal  <b>Model</b> - DX250  <b>Specification</b> - Rated Power: 1200 W, Source Temperature: 25 - 400 °C (77 - 752 °F) , Heating Method: Convection, Airflow: 538 l/min ( 19 cfm)  <b>Operation area</b> - The MRS-1100A Modular Rework System is an integrated convection rework system for the removal and reflow of BGA/CSP and SMT components. The MRS-1100A consists of a convection tool, a preheater, an adjustable tool holder, and a freestanding board holder to create a manually assisted rework system.  <b>Link for more Information</b> - <a href="#">Metcal</a></p>

Section	Measuring Instruments	
15	Vernier Caliper	<b>Brand</b> - Mitutoyo <b>Model</b> - 530 - 312 <b>Specification</b> - Range : 0 - 150 mm/ 0 - 6", Resolution : 0.02mm/0.001"
16	Vernier Caliper	<b>Brand</b> - Mitutoyo <b>Model</b> - 530 - 119 <b>Specification</b> - Range : 0 - 300 mm/ 0 - 12", Resolution : 0.02mm/0.001"
17	Outside Micrometer	<b>Brand</b> - Mitutoyo <b>Model</b> - 103 - 129 <b>Specification</b> - Range : 0 - 25 mm
18	Outside Micrometer	<b>Brand</b> - Mitutoyo <b>Model</b> - 103 - 130 <b>Specification</b> - Range : 25 - 50 mm
19	Outside Micrometer	<b>Brand</b> - Mitutoyo <b>Model</b> - 103 - 139 - 10 <b>Specification</b> - Range : 50 - 75 mm
20	Granite Surface Plate with Stand	<b>Brand</b> - Micro-Flat Datums <b>Model</b> - Granite Surface Plate with Stand (Grade - 0) <b>Specification</b> - GR - 0 Accuracy, Size : 1000 x 1000 x 150 mm
21	Digital Ultrasonic flaw Detector	<b>Brand</b> - Modsonic <b>Model</b> - Einstein II TFT <b>Specification</b> -Test Range : 10 mm to 5 meter (in steel).In HotKey mode it has 13 preset values.Fine mode adjustable in steps of 1mm. Velocity : 1000 m/s to 9999 m/s . In HotKey mode it has 7 preset values.Fine Mode adjustable in step of 1 met/sec.Delay : Up to 3 meter adjustable in 0.5mm or 5mm Step.Gain : 100dB calibrated gain adjustable in 0.5, 1, 2, 6, 12 or 20 dB step. Rejection : 0 to100%FSH with LED indicator.Rectification : Full-wave rectified with filtering.Frequency : 0.5 MHz. to 10MHz. (BroadBand), Test Modes : Pulse echo and transmit/receive, Update Rate : 50 Hz.Power : Lithium-Ion Battery pack 14.4 VDC, 4AH, gives 8 hours continuous operation from fully charged battery. Charger : Input voltage 100 to 240 VAC. Charge status indicators provided. Temperature : 0 to 55o C., Size : 154 x 255 x 68 mm (H x W x D), Weight : 2.3 kgs. with Battery. (Approx.). <b>Link of the user manual</b> - <a href="#">Ein II TFT manual020306print-1.pdf</a>
22	Metallurgical Microscope	<b>Brand</b> -Daksh Quality system <b>Model</b> - DQS 5I <b>Specification</b> - TRINOCULAR OBSERVATION HEAD : Siedentopf observation head inclined at 45°, Vertical phototube for micro photography light split (80:20), Diopter adjustment ring on ocular tube (±5), Interpupillary distance from 52mm to 75mm. EYEPIECE : Wide field eyepiece 10X (Paired) FOV 22mm OBJECTIVES (INFINITY CORRECTED) : M Long Working Distance Plan Achromatic 5X - magnification with 10X = 50X, M Long Working Distance Plan Achromatic 10X - magnification with 10X = 100X ,M Long Working Distance Plan Achromatic 20X - magnification with 10X = 200X, M Long Working Distance Plan Achromatic 50X - magnification with 10X = 500X, M Long Working Distance Plan Achromatic 100X Dry-magnification with 10X = 1000X MECHANICAL BODY : Co-axial focusing system with large knobs, PRE-FOCUSING LEVER & TENSION ADJUSTMENT RING, Quadruple nosepiece on ball bearing, Mechanical stage is 240mmX180mm, The Mechanical stage has low positioned co-axial controls on ball bearing guideways. ILLUMINATOR : The Epi-Koehler's illuminator has 12V 100W halogen lamp adjustable brightness. Polarizing Outfit , Analyser rotatable at 360 degree, polarizer and analyser can be moved out of optical path <b>Link of the user manual</b> - <a href="#">Instruction Manual Microscope.pdf</a>