

# Major Equipment List - Goa University

<b>School of Earth, Ocean and Atmospheric Sciences</b>		
	<b><i>Marine Chemistry Laboratory:</i></b>	
1	Refrigerator	
2	Hot air oven with Stabilizer	
3	Remi centrifuge (PR. 23)	
4	MilliQ Tank	
5	MilliQ Water System	
6	Millipore (Pre-filtration unit)	
7	Bioage water purification system with storage tank	
8	Water bath (PPT)	
9	Water bath shaker model L5B-24 (spectrolab)	
10	Analytical weighing balance (ACZet, Metlar Toledo, Shimadzu)	
11	pH meter (Thermo Scientific)	
12	Autoclave (Biotechnics India)	
13	Deep Freezer	
	<b><i>Marine Geology Laboratory:</i></b>	
1	Centrifuge unit	
2	Orbital shaking incubator	
3	Sieve shaker	
4	Muffle furnace	
5	Microwave degestion system	
6	Hot Plate	
7	Fume hood	
	<b><i>Marine Biology Laboratory:</i></b>	
1	Microscope – Nikon Eclipse Ti-S Epifluorescence microscope	
2	Microscope – Olympus IX51 Fluorescence microscope	
3	Zooplankton splitter	
4	Eco sounder	
5	Quadrant	
6	Bon quadrant	
7	Corer	
8	Sieve set	
9	Ekman Grab, Petersens Grab	
10	Koltwiz chamber	
11	Flow meter	
12	Stempler pipette	
13	Secchi Disc	
14	Phytoplankton net	
15	Zooplankton net	

16	Niskin Sampler	
17	Hand winch	
18	Laminar Air Flow Unit	
	<b><i>Physical Oceanography/ Remote Sensing Laboratory:</i></b>	
1	Satlantic Radiometer	
2	Absorption and attenuation instrument (Ac-9)	
3	WetSTAR CDOM flourometer	
4	Three angle back-scattering meter	
5	Automatic Weather station	
6	Multiwavelength Radiometer for in-situ generation of aerosol	
7	Aethalometer	
8	Sunphotometer	
9	Meteorological tower with sensors	
10	Flourometer	
11	Quratz Crystal Microbalance (QCM)	
12	Conductivity Temperture Depth measuring instrument (CTD)	
13	Water sample analyzer	
	<b><i>Instrumentation Room:</i></b>	
1	10 KVA Battery backup	
2	TOC Analyzer (shimadzu)	
3	Flame and Graphite AAS (Thermo Scientific) ICE 3500	
4	Spectrophotometer (UV-1800)	
<b>School of Physical and Applied Sciences</b>		
1	Computer Cluster Laboratory	
2	Embedded System and SoC Laboratory	
3	Hardware Laboratory	
4	Laser and Optics Laboratory	
5	Materials Characterization at High Temperature	
6	Materials Characterization at Low Temperature	
7	Materials Preparation Laboratory	
8	Optical Characterization Instrumentation Laboratory	
9	Powder X-ray Diffractometer Laboratory	
10	Pulsed Laser Deposition Laboratory	
11	Software Laboratory	
<b>School of Chemical Science</b>		
1	UV- VIS 8453(Agilent)	
2	LCMS (Shimadzu)	
3	Electrochemical Workstation (CHI)	
4	HPLC 1260 (Agilent)	
5	GC 2014 (Shimadzu)	

6	Electrometer (Keithley)	
7	HPLC 4000 (Jasco)	
8	Photoluminescence	
9	Automatic Flash Chromatograph	
10	AES (Agilent)	
11	Single Crystal XRD (Bruker)	
12	Micro GC (Agilent)	
13	Parr reactor (Anton Paar)	
14	HP/LT Continuous flow reactor (Amar Equip.)	
15	UV- VIS 8453(Agilent)	
16	LCMS (Shimadzu)	
17	Electrochemical Workstation (CHI)	
18	HPLC 1260 (Agilent)	
19	GC 2014 (Shimadzu)	
20	Electrometer (Keithley)	
21	HPLC 4000 (Jasco)	
22	Photoluminescence	
23	Automatic Flash Chromatograph	
24	AES (Agilent)	
25	Single Crystal XRD (Bruker)	
26	Micro GC (Agilent)	
27	Parr reactor (Anton Paar)	
28	HP/LT Continuous flow reactor (Amar Equip.)	

**Department of Microbiology**

1	High pressure liquid chromatography;	
2	Cold room;	
3	Remi-Centrifuge;	
4	RT-PCR;	
5	Electrophoretic units;	
6	Microscopy;	
7	UV-VIS spectrophotometer;	
8	Thermal Cycler (PCR);	
9	Biosafety cabinet;	
10	Fraction collector;	
11	UV transilluminator;	
12	Millipore ultrafiltration unit;	
13	Incubator cum-shakers;	
14	Spectrofluorimeter;	
15	Oxygen analyzer,	
16	Gel documentation;	
17	Protein Isoelectric focusing system;	

18	Eppendorf electroporator;	
<b>Department of Botany</b>		
1	Fourier Transform Infra Red Spectrophotometer (FTIR)	
2	Spectrofluorometer	
3	Scanning Electron Microscope (SEM)	
4	Gas Chromatography (GC)	
5	RT-PCR	
6	Deep Freezers (-20°C)	
7	Cooling Centrifuges eppendorf	
8	Cooling Centrifuges Hermle	
9	BOD Incubator	
10	Phytotron	
11	Rotary evaporator	
12	Ice machine	
13	Lyophilizer	
14	Rotary shakers	
15	Microscopes with photographic facilities	
16	Fluorescent microscope	
17	High Pressure Liquid Chromatography (HPLC)	
18	UV-VIS spectrophotometers	
19	Chlorofluorometer	
20	PCR	
21	Gel documentation system	
22	Laminar Air flow chambers	
23	Densitometer	
24	Seed Germinator	
25	Electrophoretic units	
26	Tissue culture laboratory	
27	Polyhouse	
28	Cold room	
29	Fume hood	
30	Muffle furnace	
<b>Department of Zoology</b>		
1	Light microscopy	
2	Freeze microtomy,	
3	Electrophysiology,	
4	Gas chromatography,	
5	Fluorescence spectrometry	

6	Clinical Autoanalyser	
7	Animal House	
8	Coldroom	
9	Lyophiliser	
10	Liquid Nitrogen Plant,	
11	Image Analyser	
12	UV - Visible spectrophotometry	
<b>Department of Biotechnology</b>		
	<b>Microbiology research facilities:</b>	
1	Horizontal Laminar Air Flow (RUSA)	
2	Laminar Air Flow (BTI) Horizontal	
3	Laminar Air Flow Horizontal Toshiba	
4	Single Gas Detector for H <sub>2</sub> S (Honey Well)	
5	CO <sub>2</sub> Regulator Dual Stag CO <sub>2</sub> Incubator	
6	Epi Fluorescence Trinocular Microscope (Law & Mayo)	
7	(Lynx) Binocular Microscopes Model N107T Lacorence & Mayo	
8	Trinocular Inxerted Microscope Olympus	
	<b>Molecular biology research facilities:</b>	
9	RT-PCR Touch Real Time PCR Detection System	
10	PCR Sure Cycler 8800 96 Well Thermal Cycler	
11	PCR workstation	
12	Qubit 2.0 Starter	
13	Horizontal gel electrophoresis units	
14	UV transilluminator	
	<b>Protein purification</b>	
15	Protein Purification System Start AKTA	
16	Vertical Gel Electrophoresis Unit	
17	Mini, Vertical, Units Electrophoresis	
18	Midi Dual Vertical Gel Electrophoresis Unit	
19	Gel Rocker	
	<b>Bioinformatics facility</b>	
20	Desktop computers equipped for -oimcs analysis	
21	Docking (autodoc)	
	<b>Spectrophotometric analysis</b>	
22	Shimadzu UV-Vis Spectrophotometer Model: uv-1800	
23	Shimadzu UV-Visible Spectrophotometer Model UV-1240	
24	Automatic Elisa Plate Reader (BioRad)	
	<b>Shakers, Incubators and Water baths</b>	
25	Orbital Shaking Incubator CIS-24 Plus	
26	Digital Dry Bath Incubator	

27	Bacteriological Incubator (BOD) Incubator (Tempo)	
28	Bench Top Incubator Orbital Shaker (Rivotek)	
29	Spinix-Vortex Shaker	
30	Wavemax Classic Orbital Shaker	
31	Borosil Water Bath	
32	Mini Water Bath Borosil	
33	Refrigerated Circulating Water Bath BTI	
34	Constent Temp. Water Bath	
	<b>Refrigeration &amp; Cold storage facilities</b>	
35	Deep Freezer up-right-80 Degree Centigrade(Blue Star)	
36	-20 Degree Centigrade Blue Star Deep Freezer (192 Litres Chest Freezer)	
37	Low Freezer -20Degree Centigrade Upright Type Model: uRC-V-500-1	
38	Visicooler With Stabilizer	
39	Visicooler (425 Litres) Voltas (2Nos)	
40	Frost Free Refrigerator Elanpro	
41	Samsung Refrigerator 253 Litres	
42	Haier Refrigerator 310 Litres	
43	Refrigerator Hair 250 litres	
	<b>General lab facilites/ equipments</b>	
44	PH Meter Bio Era	
45	PH Meter Eutech PH 700	
46	PH /Temp Portable Meter	
47	Precision Balance Model AroA	
48	Analytical Weighing Balance (Sartorius Rusa	
49	Analytical Weighing Balance Shimadzu	
50	Digital Weighing Balance (Wenser)	
51	Shimadzu-Aux Series Analytical Balance	
52	Vortex Mixer (2 No) (BioEra)	
53	Magnetic Stirrer (2 Nos) Model APT	
54	Magnetic Stirrer Model Adroit	
55	Magnetic Stirrer with Hot Plate	
56	Fluko Superfine Homogenizer	
57	Digital Ultra Sonic Cleaner	
58	Distillation Unit Model Frill	
59	Distillation Unit Borosil	
60	Rotary Vacuum Evaporator	
61	Freeze Dryer System CS1104	
62	Laboratory Oven (BTI)	
63	Hot Air Oven Make InLab Co	
64	Microwave Oven Panasonic Solo	
65	Vertical Autoclave Square 53 Litres	

66	Chilled Water Circulator Rotovac	
67	Ultra-Water Purification System (Millipore Unit)	
68	Peristaltic Pump Model RH-P120L (2Nos)	
69	Ice Flake Machine Model:MF/30	
70	Electric Spin Dryer	
71	Standard Pentrometer Hand Operating	
72	Vaccum Pump Rocker 300C	
	<b>Media support</b>	
73	Epson L-3210 Printer (All in One)	
74	Konica Minolta Biz hub Model 165e (Photocopy Machine)	
75	Epson L3110 All in One Printer	
76	Canon Printer Inkjet	
77	Multimedia LCD Project With Ceiling Mounted Installation	
78	Lectern / Podium With in build Sound System	
79	GPS Receiver (Garmin Make)	
80	Nikon Coolpix Digital Camera	