



**DEENBANDHU CHHOTU RAM UNIVERSITY OF SCIENCE & TECHNOLOGY, MURTHAL,
SONEPAT, HARYANA-131039**

Apparatus / Softwares for B. Tech. in Civil Engineering (4 Years)

	INFRASTRUCTURE	REQUIRED	AVAILABLE	DEFICIENCY
List of Labs / Equipments / Softwares				
S. No.	Name of Equipments / Softwares	Quantity		
2nd Year Labs: SM Lab, Surveying Lab, MS & ENGG. Lab, EE Lab, SA Lab, FM Lab, GE Lab, EG Lab				
Name of the Lab: Strength of Materials Lab				
1.	Brinell Hardness test apparatus	1		
2.	Torsion testing machine (non-destructive)	1		
3.	Izod impact testing machine	1		
4.	Charpy impact testing machine	1		
5.	Universal Testing machine	1		
6.	Strain gauge test rig	1		
7.	Rockwell Hardness test apparatus	1		
8.	Vicker Hardness test apparatus	1		
Name of the Lab: Surveying Lab				
9.	Chain / tape	5		
10.	Dumpy Leveling & Auto Level with staff	5		
11.	Theodolite	5		
12.	Plane Table	25		
13.	Surveyors/prismatic compass	5		
14.	GPS / DGPS	1		
15.	Total Station.	5		
16.	Aerial photographs	10 pairs		
17.	Software (GIS, Image Processing, CAD)	1		
18.	Pocket Stereoscope	5		
19.	Minor Stereoscope	5		
Name of the Lab: Electronics Engineering Lab				
20.	P.N. diode characteristics kit	03		
21.	C.B. transistor characteristics kit	03		
22.	C.E. transistor characteristics kit	03		
23.	Clipper & Clamper Kit	03		
24.	Half wave & Full wave rectifier kit	03		
25.	OP- Amp applications kit	03		
26.	Basic logic gate kit	03		
27.	Dual channel CRO 20 MHz	05		
28.	Function generator 1MHZ	05		
29.	Multimeter	05		
30.	Bread board	10		
31.	DC Power supply 0-30VDC	05		
32.	Discrete components of different value (PN Diode, BJT, LED, different value of resistances and IC like 7400, 7402, 7404, 7408, 7432, 7486 etc.	25 EACH		
Name of the Lab: Structural Analysis-1 Lab				
33.	Deflection of Truss Apparatus	1		
34.	Column & Struts Apparatus	1		
35.	Curved Member Apparatus	1		
36.	Redundant Joint Apparatus	1		
37.	Two and three Hinged Arch Apparatus	1		
38.	Elastic Properties of Deflected Beam Apparatus	1		
39.	Continuous Beam Apparatus	1		
40.	Suspension bridge Apparatus	1		
41.	Betti's Law Apparatus	1		
42.	Moment Area Theorem Apparatus	1		
Name of the Lab: Fluid Mechanics Lab				
43.	Bernoulli's Theorem apparatus.	1		
44.	Venturimeter	1		
45.	Orifice meter	1		
46.	laminar and turbulent flow visualization apparatus	1		
47.	water turbines	1		
48.	Pumps.	1		
49.	rectangular flume	1		
50.	current meter	1		
51.	Bend meter.	1		

	INFRASTRUCTURE	REQUIRED	AVAILABLE	DEFICIENCY
52.	Broad-crested weir			
53.	venturi flume.			
54.	single stage centrifugal pump			
Name of the Lab: Geomatic Engg. Lab				
55.	Chain / tape	5		
56.	Dumpy Leveling & Auto Level with staff	5		
57.	Theodolite.	5		
58.	Plane Table	25		
59.	Surveyors/prismatic compass	5		
60.	GPS / DGPS	1		
61.	Total Station.	5		
62.	Aerial photographs	10 pairs		
63.	Software (GIS, Image Processing, CAD)	1		
64.	Pocket Stereoscope	5		
65.	Minor Stereoscope	5		
Name of the Lab: Engineering Geology Lab				
66.	Rock samples	1 for each rock		
67.	Charts showing geological formations/faults etc	1		
68.	Microscope	1		
69.	slides	1 for each rock		
Name of the Lab: Concrete Technology Lab				
Cement testing				
70.	100 KN compression Testing machine (Automatic, electrically operated, computerized) IS Certified.	1		
71.	100 KN Compression Testing Machine (Electrically operated)	1		
72.	Muffle furnace with digital controller cum indicator with safety alarm for cement tests size 125 x 125 x 125 mm. Max. Tem. 1200 ^o C	1		
73.	Auto clave (electronics / digital IS Certified)	1		
74.	Vibrations machine for cement testing IS Certified	1		
75.	Mortar mixer (electrical driven and mechanical for cement test IS Certified	1		
76.	Humidity Chamber cabinet +5 ^o C . 60 ^o C, 95 % humidity (electronic IS Certified for cement test)	1		
77.	Analytical Balance and Physical Balance	1		
78.	Balance (electronics)150 gm.	1		
79.	Humidifier IS Certified	1		
80.	Water distillation plant / apparatus	1		
81.	Cubes molds	1		
82.	Lechetlier apparatus (with copper bath IS Certified)	1		
83.	Blaine's permeability apparatus (IS Certified)	1		
84.	Vicat Needle apparatus (IS Certified)	1		
85.	Blow Lamp	1		
86.	Glass-china wares, chemicals and tools	1		
Aggregate Testing				
87.	Mechanical Sieve Shaker with timer alongwith sieve Set mounted IS Certified	1		
88.	Measures for Bulk density (IS Certified)	1		
89.	Soundness test apparatus per IS-9373 (V)	1		
90.	Specific gravity test apparatus with Pycnometer (Set of 6)	1		
	Universal Testing Machine 2000 KN capacity (electronic and computerized) fully automatic including flexural strength and steel testing facilities IS Certified	1		
91.	2000 KN compression Testing machine electrically operated	1		
92.	100 KN flexural strength testing machine electrically operated	1		
93.	Pan type concrete mixer capacity 40 ltr. Electrically operated	1		
94.	Vibrating table for 150 mm. cube moulds IS Certified	1		
95.	Bleeding apparatus for concrete IS Certified	1		
96.	Needle vibrator (petrol driven) IS Certified	1		
97.	Air entrainment meter 5 ltr. Capacity IS Certified	1		
98.	Cube moulds 15 x 15 x 15 cm.	1		
99.	Concrete Thermometer (digital)	1		
100.	Slump test apparatus complete with temping rod IS Certified	1		
101.	Compaction factor Apparatus IS Certified	1		
102.	Bulk density measure set for concrete IS certified	1		
103.	Vibrating hammer for vibrating dry mix at zero slump for	1		

	INFRASTRUCTURE	REQUIRED	AVAILABLE	DEFICIENCY
	dry lean concrete			
104.	Curing tank thermostatically control with temperate range of 5 ^o to 95 ^o C and ambient temperate range 27 ^o ± 2 ^o C Relative Humidity 50% ± 10 for 36/72 cubes of 150 /70.6 mm.	1		
105.	Beam moulds for flexural strength along with 1 temping rod IS Certified 100x100x500;150x50x700	1		
106.	Rebound schimid Hammer (Normal) & Digital	1		
107.	Ultrasonic pulse velocity tester (pundit)	1		
108.	Asphalt mixer	1		
109.	Asphalt mixer theoretical density meter	1		
110.	Water bath electrically operated and thermostatically controlled with adjustable shelves IS Certified suitable for marshal stabilities bitumen moulds	1		
111.	Oven	1		
112.	Tile abrasion testing machine	1		
Name of the Lab: Open Channel Flow Lab				
113.	Bernoulli's Theorem apparatus.	1		
114.	Venturimeter	1		
115.	Orifice meter.	1		
116.	laminar and turbulent flow visualization apparatus	1		
117.	water turbines	1		
118.	Pumps.	1		
119.	Rectangular flume	1		
120.	Current meter	1		
121.	Horizontal rectangular open channel	1		
122.	Bend meter.	1		
Name of the Lab: Transportation Engineering-I lab				
123.	Universal penetrometer with timer (with Bituminous penetration Kit)	1		
124.	Marshall stability apparatus 50 KN electronic for normal and modified compacted bitumen specimen	1		
125.	Automatic compactor for standard & modified compaction mixes	1		
126.	Sample ejector (mechanical 1 each for standard and modified moulds)	1		
127.	Centrifuge type bitumen extractor automatic (new design)	1		
128.	Pavement core cutting machine with 150 mm. diameter (petrol) Diamond Core (200/400 mm long)	1		
129.	Vacuum pump with specific gravity determination apparatus as per IS-1202-1978	1		
130.	Ductility test apparatus digital	1		
131.	Bituminous stripping of aggregate test apparatus	1		
132.	Ring & ball softening point test apparatus	1		
133.	Flash point . Cleveland open cup test apparatus (rates with replacements extra, as quoted)	1		
134.	Saybolt Furol Viscometer	1		
135.	Length Gauge as per IS Certified 2386 for elongation	1		
136.	Thickness gauge as per IS-2386 for flakiness index	1		
137.	Soundness test apparatus per IS-9373 (V)	1		
138.	Aggregate impact value test apparatus (IS-9373) with counter scale	1		
139.	Specific gravity test apparatus with Pycnometer (Set of 6)	1		
140.	Riffle sample Divider IS Certified	1		
141.	Crushing strength test apparatus	1		
142.	Los Angeles abrasion test apparatus	1		
143.	Automatic Traffic Counter cum classifier	1		
144.	Radar Gun	1		
Name of the Lab: Geo-Mechanics Lab				
145.	Soil Cone Penetrometer, Digital	1		
146.	Atterberg limits apparatus a) Liquid limit device (cone penetrometer digital) b) Plastic limit apparatus and uppal's syringe for P.I.	1		
147.	Universal automatic compactor	1		
148.	Dry bulk density apparatus (sands pouring cylinder) complete IS cert.	1		
149.	Post hole auger (with extension rods) . NX-BX-AX size	1		
150.	Core cutter apparatus (with dolly rammer)	1		
151.	California Bearing ratio (CBR) apparatus motorized and	1		

	INFRASTRUCTURE	REQUIRED	AVAILABLE	DEFICIENCY
	electronic)			
152.	Swell test apparatus IS Certified	1		
153.	Oven electronically operated thermostatically controlled range up to 200° C digital indicator cum controller with safety alarm with circulating fan 450 x 450 x 450 mm.	1		
154.	Pycnometer for specific gravity	1		
155.	High speed stirrer	1		
156.	Plummet balance apparatus	1		
157.	Screen/sieve set with lid and pan	1		
158.	Split Spoon Sampler, with Brass Liner	1		
159.	Pan Balance	1		
160.	Speedy Moisture Meter, Range 0-50% (Guage Div. :1%) with digital weighing balance	1		
161.	Standard Penetration Test (SPT) kit	1		
162.	Unconfined Compression Tester	1		
163.	Direct Shear Test Apparatus	1		
164.	Triaxial Test Apparatus	1		
165.	Consolidation Apparatus	1		
166.	Water Bath	1		
Survey Camp				
Equipments as required in CE-211 (Surveying Lab) + CE-216 (Geomantic Engineering Lab)				
Name of the Lab: Environmental Engineering Lab				
167.	Hot Plate Rectangular & Round	1		
168.	Magnetic stirrer	1		
169.	Water Bath	1		
170.	Electric Oven	1		
171.	Vacuum Pump	1		
172.	Mechanical Stirrer	1		
173.	Bacteriological incubator	1		
174.	Vacuum filtration pump	1		
175.	Electronic colony counter	1		
176.	Water deionizer	1		
177.	Depth sampler	1		
178.	Bottom sampler	1		
179.	Conductivity meter	1		
180.	Pathologic microscope	1		
181.	PH meter	1		
182.	UV-Visible Spectrophotometer	1		
183.	Flame Photometer	1		
184.	Turbidity meter	1		
185.	Autoclave	1		
186.	Centrifuge	1		
187.	Electronic Colony Counter	1		
188.	Inoculation Hood	1		
189.	Dissection Microscope	1		
190.	Stereoscopic Microscope	1		
191.	Dissolved Oxygen Meter	1		
192.	Gas Liquid Chromatograph	1		
Name of the Lab: Reinforced Concrete Design-I & IILab				
193.	AUTOCAD software Civil 3D	At 20 terminal		
194.	PC	20		
195.	Printer for at least A3 size			
Name of the Lab: Foundation Engineering Lab				
196.	Soil Cone Penetrometer, Digital	1		
197.	Atterberg limits apparatus c) Liquid limit device (cone penetrometer digital) d) Plastic limit apparatus and up palçs syringe for P.I.	1		
198.	Universal automatic compactor	1		
199.	Dry bulk density apparatus (sands pouring cylinder) complete IS cert.	1		
200.	Post hole auger (with extension rods) . NX-BX-AX size	1		
201.	Core cutter apparatus (with dolly rammer)	1		
202.	California Bearing ratio (CBR) apparatus motorized and electronic)	1		
203.	Swell test apparatus IS Certified	1		
204.	Oven electronically operated thermostatically controlled range up to 200° C digital indicator cum controller with safety alarm with circulating fan 450 x 450 x 450 mm.	1		
205.	Pycnometer for specific gravity	1		
206.	High speed stirrer	1		
207.	Plummet balance apparatus	1		

	INFRASTRUCTURE	REQUIRED	AVAILABLE	DEFICIENCY
208.	Screen/sieve set with lid and pan	1		
209.	Split Spoon Sampler, with Brass Liner	1		
210.	Pan Balance	1		
211.	Speedy Moisture Meter, Range 0-50% (Guage Div. :1%) with digital weighing balance	1		
212.	Standard Penetration Test (SPT) kit	1		
213.	Unconfined Compression Tester	1		
214.	Direct Shear Test Apparatus	1		
215.	Triaxial Test Apparatus	1		
216.	Consolidation Apparatus	1		
217.	Water Bath	1		
4th Year Labs: EE Lab, IE Lab				
Name of the Lab: Environmental Engineering-II Lab				
218.	Hot Plate Rectangular & Round	1		
219.	Magnetic stirrer	1		
220.	Water Bath	1		
221.	Electric Oven	1		
222.	Vacuum Pump	1		
223.	Mechanical Stirrer	1		
224.	Bacteriological incubator	1		
225.	Vacuum filtration pump	1		
226.	Electronic colony counter	1		
227.	Water deionizer	1		
228.	Depth sampler	1		
229.	Bottom sampler	1		
230.	Conductivity meter	1		
231.	Pathologic microscope	1		
232.	PH meter	1		
233.	UV-Visible Spectrophotometer	1		
234.	Flame Photometer	1		
235.	Turbidity meter	1		
236.	Autoclave	1		
237.	Centrifuge	1		
238.	Electronic Colony Counter	1		
239.	Inoculation Hood	1		
240.	Dissection Microscope	1		
241.	Stereoscopic Microscope	1		
242.	Dissolved Oxygen Meter	1		
243.	Atomic Absorption Spectrophotometer	1		
244.	Gas Liquid Chromatograph	1		
Name of the Lab: Irrigation Engineering lab				
245.	Models of Dams	1		
246.	Models of Spillways	1		
247.	Models of Barrages	1		
248.	Models of Cross Drainage Structures	1		

Certified by the Director/Principal