



## Experiment Name : Enthropometry Measurement

Course Name : Ergonomics & Safety Lab  
Course No: IPE 4710

### Submitted to

Nusrath Zahan	Assistant Professor, RUET
---------------	------------------------------

### Submitted by

Name	ID No
Md. Abir Hossain	1805004
Md. Zisad Khan	1805013
Md. Baki Billah Ripon	1805044
K. M. Jomjom Hasan	1805046
Md. Saiful Islam Safi	1805059

**BSc Engineering, Department of Industrial & Production Engineering  
Rajshahi University of Engineering & Technology  
Rajshahi-6204  
May, 2023**

An Anthropometric Table is a structured representation of various anthropometric measurements collected from a specific population or group of individuals.

**Table 1:** Anthropometry Measurements for 1<sup>st</sup> Five persons.

		Data-1	Data-2	Data-3	Data-4	Data-5
	<b>Name</b>	Ridoy	Rakib	Abir	Saiful	Bulbul
	<b>Gender</b>	Male	Male	Male	Male	Male
	<b>Age</b>	23	21	27	24	23
1	<b>Stature</b>	194	172.45	167.6	172	173.9
2	<b>Eye Height, Standing</b>	144	162	154.9	157.48	158.7
3	<b>Shoulder Height, Standing</b>	125	138	138.43	141.24	142
4	<b>Elbow Height, Standing</b>	97	110.9	105.04	106	106
5	<b>Hip Height (Trochanter)</b>	85.45	93	96.5	91.44	90
6	<b>Knuckle Height, Standing</b>	67	75.3	72.9	72.39	73
7	<b>Finger Height, Standing</b>	57	64	62.8	63.5	62.9
8	<b>Sitting Height</b>	76.3	82.28	83.82	85.7	86.3
9	<b>Sitting Eye Height</b>	69	69	76.2	76.2	76.8
10	<b>Sitting Shoulder Height</b>	50.8	49.12	57.1	55.8	56.5
11	<b>Sittings Elbow Height</b>	20.32	20.43	20.5	20.95	20.7
12	<b>Sitting Thigh Height (Clearance)</b>	12.7	14.33	16.5	13.9	14.6
13	<b>Sittings Knee Height</b>	46.99	53.07	50.8	53.4	53.97
14	<b>Sittings Popliteal Height</b>	41.27	45.72	43.18	43.81	44.45
15	<b>Shoulder Elbow Length</b>	31.75	33.34	33.02	35.56	36.2
16	<b>Elbow-Fingertip Length</b>	39	44.45	45.72	45.72	46.99

17	<b>Overhead Grip Reach, Sitting</b>	109	113.03	113.03	120.65	121.9
18	<b>Overhead Grip Reach, Standing</b>	190.13	203.2	200.6	207.01	207.28
19	<b>Forward Grip Reach</b>	66	66.04	67.3	67.31	67.94
20	<b>Arm Length, Vertical</b>	66.31	73.66	72.6	78.74	79.3
21	<b>Downward Grip Reach</b>	58	64.1	63	67.94	68.5
22	<b>Chest Depth</b>	16.12	18.1	21.59	15.87	19
23	<b>Abdominal Depth, Sitting</b>	24.6	19.05	25.4	18.41	22.86
24	<b>Buttock-Knee Depth, Sitting</b>	47	57.15	53.34	55.24	55.88
25	<b>Buttock-Popliteal Depth, Sitting</b>	39.64	46.99	48.2	48.26	48.9
26	<b>Shoulder Breadth (Biacromial)</b>	30.56	29.21	33	31.75	32.26
27	<b>Shoulder Breadth (Bideltoid)</b>	43.34	44.45	49.5	54.61	33.27
28	<b>Hip Breadth, Sitting</b>	30	30.48	33.22	36.83	55.24
29	<b>Span</b>	158	175.2	170.1	173.35	175
30	<b>Elbow Span</b>	73.6	85	83.8	86.6	85.3
31	<b>Hand Length</b>	16	17.7	17.7	18.1	17.54
32	<b>Hand Breadth</b>	7	8.24	8.26	8.2	8.38

**Table 2:** Anthropometry Measurements for 2nd Five persons.

		Data-1	Data-2	Data-3	Data-4	Data-5
	<b>Name</b>	Khairul	jahid	Ridoy	Sharif	Rajib
	<b>Gender</b>	Male	Male	Male	Male	Male
	<b>Age</b>	22	19.5	23	21	19
1	<b>Stature</b>	169	163	168.56	170	167
2	<b>Eye Height, Standing</b>	159.5	150.5	155	157.5	156
3	<b>Shoulder Height, Standing</b>	142.5	132.5	136	137.5	140.5
4	<b>Elbow Height, Standing</b>	106.5	104	100	107	108
5	<b>Hip Height (Trochanter)</b>	90.5	80.5	86	84	91
6	<b>Knuckle Height, Standing</b>	70	67.5	68	74	71
7	<b>Finger Height, Standing</b>	60.5	57.5	58.89	64	61.5
8	<b>Sitting Height</b>	91	82	86	92	83
9	<b>Sitting Eye Height</b>	78	72	73.34	79	73
10	<b>Sitting Shoulder Height</b>	59	58	56	57	57
11	<b>Sittings Elbow Height</b>	28	25	22.5	25	23.5
12	<b>Sitting Thigh Height (Clearance)</b>	15	14	13.56	13	10
13	<b>Sittings Knee Height</b>	53.5	50	53.56	54	58
14	<b>Sittings Popliteal Height</b>	47	43	45.67	43	47
15	<b>Shoulder Elbow Length</b>	35.5	30.5	36	30	36.5
16	<b>Elbow-Fingertip Length</b>	46.5	43	48	43	47

17	<b>Overhead Grip Reach, Sitting</b>	124	123	124	122	121
18	<b>Overhead Grip Reach, Standing</b>	202.5	190.3	205	202	204.5
19	<b>Forward Grip Reach</b>	74	65	74	63	72
20	<b>Arm Length, Vertical</b>	81	75.5	79	75	79
21	<b>Downward Grip Reach</b>	69.5	65.4	67	63	68
22	<b>Chest Depth</b>	24	26	19	16	17
23	<b>Abdominal Depth, Sitting</b>	24	29.7	23	18	18
24	<b>Buttock-Knee Depth, Sitting</b>	57.5	52	57	54	55
25	<b>Buttock-Popliteal Depth, Sitting</b>	50	44	45.5	45	48.5
26	<b>Shoulder Breadth (Biacromial)</b>	34.59	33	32.5	33	33
27	<b>Shoulder Breadth (Bideloid)</b>	47.58	45	48	45	42
28	<b>Hip Breadth, Sitting</b>	35	33	31	32	28
29	<b>Span</b>	178	164	175	167	178
30	<b>Elbow Span</b>	95	84	92	86.4	93
31	<b>Hand Length</b>	18	18.5	18	18	20
32	<b>Hand Breadth</b>	10	9	8	9	9

**Table 3:** Anthropometry Measurements for 3<sup>rd</sup> Five persons.

		Data-1	Data-2	Data-3	Data-4	Data-5
	<b>Name</b>	Ripon	Zisad	Rahel	Akib	Hadi
	<b>Gender</b>	Male	Male	Male	Male	Male
	<b>Age</b>	23	22	21	25	26
1	<b>Stature</b>	167	175.2	165.1	172.72	163.83
2	<b>Eye Height, Standing</b>	158	162.56	152.4	160.02	152.4
3	<b>Shoulder Height, Standing</b>	137.1	147	133.2.54	142	136.906
4	<b>Elbow Height, Standing</b>	105.4	114.3	99.06	109.22	105.41
5	<b>Hip Height (Trochanter)</b>	91.4	92.7	83.185	98.5	95.25
6	<b>Knuckle Height, Standing</b>	69.8	78.7	67.945	77.9	69.85
7	<b>Finger Height, Standing</b>	59.6	68.5	57.785	68.5	62.484
8	<b>Sitting Height</b>	83.18	90.17	84.455	86.3	87.122
9	<b>Sitting Eye Height</b>	73.66	76.835	70.485	75.93	74.422
10	<b>Sitting Shoulder Height</b>	55.88	59.055	56.515	54.88	55.626
11	<b>Sittings Elbow Height</b>	22.86	21.53	25.146	26.4	20.32
12	<b>Sitting Thigh Height (Clearance)</b>	11.43	14.605	12.065	12.684	12.954
13	<b>Sittings Knee Height</b>	52.07	55.2	51.435	52.324	49.53
14	<b>Sittings Popliteal Height</b>	44.45	45.2	45.85	45.72	43.18
15	<b>Shoulder Elbow Length</b>	34.9	37.465	36.56	32.75	33.02
16	<b>Elbow-Fingertip Length</b>	45.72	45.72	84.815	44.9	43.434

17	<b>Overhead Grip Reach, Sitting</b>	135.8	138.43	129.175	121.2	118.11
18	<b>Overhead Grip Reach, Standing</b>	218.4	220.98	204.756	203.47	199.39
19	<b>Forward Grip Reach</b>	82.55	85.09	74.93	66	63.5
20	<b>Arm Length, Vertical</b>	76.83	81.28	73.66	75.43	73.66
21	<b>Downward Grip Reach</b>	67.31	67.945	63.5	64.008	64.008
22	<b>Chest Depth</b>	16.51	22.86	20.05	19.58	25.4
23	<b>Abdominal Depth, Sitting</b>	11.4	21.59	24.7	18.034	23.876
24	<b>Buttock-Knee Depth, Sitting</b>	52	60.96	55.2	54.864	55.118
25	<b>Buttock-Popliteal Depth, Sitting</b>	43.18	48.2	45.085	43.45	43.688
26	<b>Shoulder Breadth (Biacromial)</b>	35.5	33.02	35.56	33	36.83
27	<b>Shoulder Breadth (Bideltoid)</b>	40	46.99	45.085	53.3	53.34
28	<b>Hip Breadth, Sitting</b>	26	32.385	28.5	33.24	39.37
29	<b>Span</b>	172	180.34	169.9	170.38	168.91
30	<b>Elbow Span</b>	86.3	90.17	85	85.36	83.82
31	<b>Hand Length</b>	17.7	20.32	19.05	20.05	18.288
32	<b>Hand Breadth</b>	7.62	10.16	10.1	8.89	8.128

**Table 4:** Anthropometry Measuremnts for 4<sup>th</sup> Five person.

		Data-1	Data-2	Data-3	Data-4	Data-5
	<b>Name</b>	Robin	Joynul	Maruf	Hasan	Reza
	<b>Gender</b>	Male	Male	Male	Male	Male
	<b>Age</b>	24	23	25	20	22
1	<b>Stature</b>	167.7	175.57	178.03	163.8	170.2
2	<b>Eye Height, Standing</b>	158.8	165.5	166.2	153.7	158.5
3	<b>Shoulder Height, Standing</b>	139.9	148.23	148.06	137.2	144.5
4	<b>Elbow Height, Standing</b>	107.43	112.11	113.97	102.1	110.8
5	<b>Hip Height (Trochanter)</b>	96.53	100.02	100.09	79.5	90.5
6	<b>Knuckle Height, Standing</b>	74.55	80.09	76.53	72.4	73.4
7	<b>Finger Height, Standing</b>	64.21	72.2	66.89	62.7	68.5
8	<b>Sitting Height</b>	87.03	88.02	87.05	88.9	87.4
9	<b>Sitting Eye Height</b>	74.36	75.05	74.58	78.7	73.4
10	<b>Sitting Shoulder Height</b>	56.8	57.23	58.86	62.2	56.2
11	<b>Sittings Elbow Height</b>	22.45	26.49	23.45	27.2	22.6
12	<b>Sitting Thigh Height (Clearance)</b>	12.35	12.03	14.45	15.2	13.3
13	<b>Sittings Knee Height</b>	51.03	53.35	55.67	50.8	55.8
14	<b>Sittings Popliteal Height</b>	44.07	47.76	47.35	41.4	43.5
15	<b>Shoulder Elbow Length</b>	32.25	32.25	33.45	35.1	35.8
16	<b>Elbow-Fingertip Length</b>	44.5	45.56	46.7	44.5	47.3



17	<b>Overhead Grip Reach, Sitting</b>	119.25	123.36	125.56	127	122.5
18	<b>Overhead Grip Reach, Standing</b>	201.5	206.69	208.5	200.7	208.5
19	<b>Forward Grip Reach</b>	65	67.83	64.65	71.1	71.5
20	<b>Arm Length, Vertical</b>	74.63	76.56	77.63	77.3	80.2
21	<b>Downward Grip Reach</b>	63.35	64.99	65.5	66	67.7
22	<b>Chest Depth</b>	22.63	24.45	26.87	19.1	18.8
23	<b>Abdominal Depth, Sitting</b>	22.94	23.34	23.44	25.4	26.1
24	<b>Buttock-Knee Depth, Sitting</b>	54.98	55.65	56.76	55.9	59.9
25	<b>Buttock-Popliteal Depth, Sitting</b>	44.03	45.67	44.4	43.2	49.9
26	<b>Shoulder Breadth (Biacromial)</b>	34.45	35.56	36.61	40.6	41.2
27	<b>Shoulder Breadth (Bideloid)</b>	52.23	54.8	55.39	48.3	50.8
28	<b>Hip Breadth, Sitting</b>	36.75	37.86	36.65	35.6	34.5
29	<b>Span</b>	167.43	172.24	173.3	177.8	176.9
30	<b>Elbow Span</b>	84.49	87.75	89.93	94	95.6
31	<b>Hand Length</b>	18.69	20.33	21.11	17.8	19
32	<b>Hand Breadth</b>	8.25	9.45	9.45	8.9	9

**Table 5 :** Anthropometry Measuremnts for 5<sup>th</sup> Five persons.

		Data-1	Data-2	Data-3	Data-4	Data-5
	<b>Name</b>	Akand	Shamit	Halim	Asad	Habib
	<b>Gender</b>	Male	Male	Male	Male	Male
	<b>Age</b>	23	24.5	23	24	21
1	<b>Stature+B6:C37+B6:C37</b>	167.5	174.5	179.3	160.5	165.2
2	<b>Eye Height, Standing</b>	155.8	162.5	165	152.5	154.5
3	<b>Shoulder Height, Standing</b>	139.9	149.25	147.06	137.5	144.5
4	<b>Elbow Height, Standing</b>	108.45	111.1	114.97	103.5	112.8
5	<b>Hip Height (Trochanter)</b>	97.53	99.02	100.09	79.5	90.5
6	<b>Knuckle Height, Standing</b>	75.55	81.09	76.53	72.5	73.4
7	<b>Finger Height, Standing</b>	64.2	73.2	66.89	61.5	68.5
8	<b>Sitting Height</b>	85.03	88.02	87.05	87.5	87.4
9	<b>Sitting Eye Height</b>	75.36	74.05	74.5	78.5	73.5
10	<b>Sitting Shoulder Height</b>	55.8	55.23	57.85	60.5	55.5
11	<b>Sittings Elbow Height</b>	21.45	26.45	24.5	27.5	22.2
12	<b>Sitting Thigh Height (Clearance)</b>	12.35	12.05	14.45	15.2	12.3
13	<b>Sittings Knee Height</b>	51.03	53.3	55.67	50.8	55.5
14	<b>Sittings Popliteal Height</b>	44.07	47.75	47.35	41.4	44.5
15	<b>Shoulder Elbow Length</b>	32.25	31.25	33.4	35.5	36.8

16	<b>Elbow-Fingertip Length</b>	44.5	46.56	45.7	44	48.2
17	<b>Overhead Grip Reach, Sitting</b>	120.25	123.35	125.55	125	125.5
18	<b>Overhead Grip Reach, Standing</b>	201.5	206.69	209.5	200.7	209.5
19	<b>Forward Grip Reach</b>	65	67.83	65.65	71.1	72.5
20	<b>Arm Length, Vertical</b>	74.63	76.56	75.65	77.5	79.5
21	<b>Downward Grip Reach</b>	63.35	64.95	65	66.5	67.7
22	<b>Chest Depth</b>	24.63	24.4	26.87	19.1	18.8
23	<b>Abdominal Depth, Sitting</b>	21.9	23.35	23.44	25.4	26.1
24	<b>Buttock-Knee Depth, Sitting</b>	54.98	55.65	55.75	55.9	59.9
25	<b>Buttock-Popliteal Depth, Sitting</b>	47.03	45.67	44.5	43.2	49.9
26	<b>Shoulder Breadth (Biacromial)</b>	34.45	35.56	36.61	40.5	42.2
27	<b>Shoulder Breadth (Bideloid)</b>	52.23	55.8	54.39	49.3	49.5
28	<b>Hip Breadth, Sitting</b>	36.75	37.86	36.65	36.5	34
29	<b>Span</b>	167.43	172.24	173.5	175.5	177.9
30	<b>Elbow Span</b>	84.49	87.75	89.93	94	96.6
31	<b>Hand Length</b>	19.6	21.3	20.11	17.8	20
32	<b>Hand Breadth</b>	9.5	8.4	9.5	8.5	8

**Table 6 :** Calculated Values on Anthropometry Measuremnts for all Persons.

	Values	Mean	Standard Deviation	5%	95%	1%	99%	50%
1	<b>Stature+B6:C37+B6:C37</b>	170.5464	6.8667537	181.80788	159.2849	186.4773	154.6155	170.5464
2	<b>Eye Height, Standing</b>	157.3584	5.1270651	165.76679	148.95	169.2532	145.4636	157.3584
3	<b>Shoulder Height, Standing</b>	140.5323	5.5517206	149.63716	131.4275	153.4123	127.6523	140.5323
4	<b>Elbow Height, Standing</b>	107.2424	4.773337651	115.07067	99.41413	118.3165	96.16826	107.2424
5	<b>Hip Height (Trochanter)</b>	91.3082	6.57002963	102.08305	80.53335	106.5507	76.06573	91.3082
6	<b>Knuckle Height, Standing</b>	73.253	3.8837825	79.622403	66.8836	82.26338	64.24262	73.253
7	<b>Finger Height, Standing</b>	63.92996	4.3614420	71.082725	56.7772	74.04851	53.81141	63.92996
8	<b>Sitting Height</b>	86.12108	3.2565261	91.461783	80.78038	93.67622	78.56594	86.12108
9	<b>Sitting Eye Height</b>	74.63488	2.6996174	79.062253	70.20751	80.89799	68.37177	74.63488
10	<b>Sitting Shoulder Height</b>	56.57784	2.6370892	60.902666	52.25301	62.69589	50.45979	56.57784
11	<b>Sittings Elbow Height</b>	23.49784	2.5024321	27.601829	19.39385	29.30348	17.6922	23.49784
12	<b>Sitting Thigh Height (Clearance)</b>	13.40032	1.4571178	15.789993	11.01065	16.78083	10.01981	13.40032
13	<b>Sittings Knee Height</b>	52.83196	2.4458956	56.843228	48.82069	58.50644	47.15748	52.83196
14	<b>Sittings Popliteal Height</b>	44.706	1.9897759	47.969233	41.44277	49.32228	40.08972	44.706

15	<b>Shoulder Elbow Length</b>	34.0446	2.1240448	37.528034	30.56117	38.97238	29.11682	34.0446
16	<b>Elbow-Fingertip Length</b>	46.85956	8.1400268	60.209204	33.50992	65.74442	27.9747	46.85956
17	<b>Overhead Grip Reach, Sitting</b>	122.8658	6.2474157	133.11156	112.62	137.3598	108.3718	122.8658
18	<b>Overhead Grip Reach, Standing</b>	204.53184	6.7083629	215.53356	193.5301	220.0952	188.9684	204.5318
19	<b>Forward Grip Reach</b>	69.4728	5.5495912	78.57413	60.37147	82.34785	56.59775	69.4728
20	<b>Arm Length, Vertical</b>	76.4452	3.2239857	81.732537	71.15786	83.92485	68.96555	76.4452
21	<b>Downward Grip Reach</b>	65.45004	2.4900221	69.533676	61.3664	71.22689	59.67319	65.45004
22	<b>Chest Depth</b>	20.9092	3.6095474	26.828858	14.98954	29.28335	12.53505	20.9092
23	<b>Abdominal Depth, Sitting</b>	22.5612	3.7278909	28.674941	16.44746	31.20991	13.91249	22.5612
24	<b>Buttock-Knee Depth, Sitting</b>	55.50488	2.7750932	60.056033	50.95373	61.9431	49.06666	55.50488
25	<b>Buttock-Popliteal Depth, Sitting</b>	45.84372	2.6475128	50.185641	41.5018	51.98595	39.70149	45.84372
26	<b>Shoulder Breadth (Biacromial)</b>	34.9808	3.315720	40.418581	29.54302	42.67327	27.28833	34.9808
27	<b>Shoulder Breadth (Bideloid)</b>	48.5682	5.491057	57.573535	39.56287	61.30745	35.82895	48.5682
28	<b>Hip Breadth, Sitting</b>	34.6954	5.482387	43.686515	25.70428	47.41454	21.97626	34.6954
29	<b>Span</b>	172.3768	5.098186	180.73783	164.0158	184.2046	160.549	172.3768
30	<b>Elbow Span</b>	87.9956	5.118534	96.389996	79.6012	99.8706	76.1206	87.9956
31	<b>Hand Length</b>	18.82752	1.306257	20.969782	16.68526	21.85804	15.797	18.82752
32	<b>Hand Breadth</b>	8.75712	0.790432	10.05343	7.46081	10.59092	6.923316	8.75712