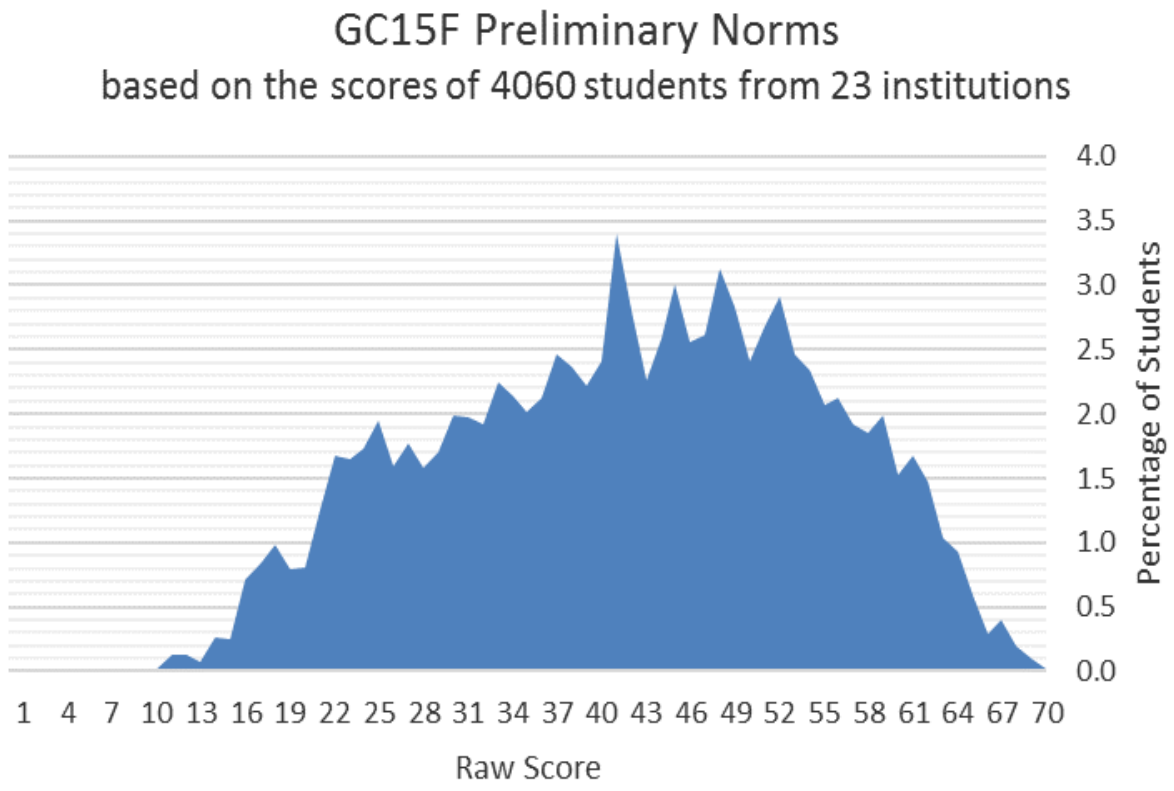
American Chemical Society Division of Chemical Education
Preliminary Composite Norms – General Chemistry First Term 2015 (GC15F)

Score	Percentile
70	100
69	100
68	100
67	99
66	99
65	99
64	98
63	97
62	96
61	94
60	93
59	91
58	89
57	87
56	85
55	83
54	81
53	78
52	76
51	73
50	70
49	68
48	65
47	62
46	59
45	56

Score	Percentile
44	54
43	51
42	49
41	45
40	43
39	40
38	38
37	36
36	33
35	31
34	29
33	27
32	25
31	23
30	21
29	19
28	17
27	16
26	14
25	12
24	10
23	9
22	7
21	6
20	5
19	4

Score	Percentile
18	3
17	2
16	1
15	1
14	1
13	0
12	0
11	0
10	0
9	0
8	0
7	0
6	0
5	0
4	0
3	0
2	0
1	0
0	0

Mean	41.8
Std. deviation	12.8
Median	43
KR-21 reliability	0.91
Std error/meas	3.81



General Chemistry 2015 - First-Term Exam (Gray version)

Based on 1926 performances from 13 institutions

Item	Diff Index	Disc Index	% 1st Wrong	% 2nd Wrong	% 3rd Wrong	Item	Diff Index	Disc Index	% 1st Wrong	% 2nd Wrong	% 3rd Wrong
1	0.41	0.62	7.4	6.5	45.0	36	0.64	0.57	10.8	18.2	6.8
2	0.60	0.54	25.5	3.0	11.7	37	0.71	0.52	23.6	1.9	3.4
3	0.73	0.49	7.9	13.4	5.4	38	0.65	0.55	19.2	5.0	11.1
4	0.73	0.63	6.8	4.6	15.4	39	0.42	0.57	21.5	11.4	25.0
5	0.33	0.17	14.3	21.6	30.9	40	0.63	0.42	11.5	16.5	8.3
6	0.88	0.32	6.4	2.4	3.1	41	0.70	0.52	3.7	19.9	6.6
7	0.72	0.41	20.8	5.4	2.1	42	0.76	0.54	11.7	6.5	5.4
8	0.67	0.59	11.9	13.3	6.9	43	0.54	0.60	23.4	19.4	2.8
9	0.80	0.32	1.1	3.4	15.0	44	0.81	0.47	6.6	8.8	3.2
10	0.34	0.24	20.9	15.6	28.9	45	0.83	0.40	2.8	6.9	7.4
11	0.48	0.61	3.3	7.1	41.6	46	0.70	0.41	10.4	2.0	17.9
12	0.64	0.62	2.5	26.7	6.1	47	0.73	0.62	12.7	11.3	2.9
13	0.57	0.60	7.0	31.6	4.4	48	0.76	0.60	10.6	11.0	1.7
14	0.65	0.44	8.8	19.8	6.3	49	0.51	0.47	18.6	21.8	8.2
15	0.65	0.63	13.8	7.5	14.0	50	0.37	0.37	22.4	29.5	10.4
16	0.54	0.51	14.3	19.7	11.0	51	0.48	0.59	23.2	19.3	8.8
17	0.43	0.35	10.8	25.6	20.5	52	0.71	0.53	8.3	16.5	3.9
18	0.30	0.05	25.9	6.2	37.3	53	0.49	0.69	20.4	27.6	2.7
19	0.92	0.18	2.8	1.7	3.2	54	0.63	0.80	18.1	9.7	8.9
20	0.42	0.47	3.6	40.1	14.4	55	0.53	0.26	1.7	2.1	42.9
21	0.74	0.19	15.8	5.6	4.9	56	0.42	0.57	18.3	19.0	20.1
22	0.79	0.31	9.1	7.3	4.5	57	0.62	0.27	6.0	12.1	19.7
23	0.38	0.60	8.6	17.9	35.3	58	0.73	0.55	14.5	5.1	7.2
24	0.46	0.46	9.8	15.1	29.3	59	0.52	0.62	13.7	25.5	8.4
25	0.62	0.25	17.4	7.6	13.0	60	0.52	0.50	16.2	13.4	17.8
26	0.67	0.53	10.2	19.7	3.0	61	0.60	0.54	29.1	5.2	4.6
27	0.37	0.59	10.4	38.6	14.2	62	0.47	0.40	15.1	14.5	22.6
28	0.33	0.43	13.2	28.8	25.4	63	0.61	0.47	7.6	14.4	16.7
29	0.68	0.58	8.0	12.8	10.6	64	0.56	0.49	11.4	28.7	3.5
30	0.41	0.54	15.3	29.1	14.2	65	0.51	0.55	13.2	6.6	28.7
31	0.56	0.57	18.2	14.7	10.7	66	0.40	0.62	16.7	17.6	24.6
32	0.39	0.43	12.9	32.0	16.3	67	0.53	0.38	8.4	32.0	6.5
33	0.83	0.36	3.5	6.5	6.7	68	0.57	0.66	12.8	16.0	13.2
34	0.45	0.43	5.1	14.5	35.2	69	0.70	0.42	14.9	8.7	5.7
35	0.69	0.62	4.4	23.1	3.4	70	0.48	0.34	22.5	13.2	15.0

General Chemistry 2015 - First-Term Exam (Yellow version)

Based on 1821 performances from 11 institutions

Item	Diff Index	Disc Index	% 1st Wrong	% 2nd Wrong	% 3rd Wrong	Item	Diff Index	Disc Index	% 1st Wrong	% 2nd Wrong	% 3rd Wrong
1	0.62	0.48	12.5	2.6	22.3	36	0.65	0.51	17.1	4.7	12.7
2	0.45	0.64	9.4	40.1	5.4	37	0.71	0.67	3.8	22.0	3.0
3	0.79	0.53	13.0	3.7	4.0	38	0.69	0.53	9.2	16.3	5.5
4	0.35	0.19	13.1	19.9	32.0	39	0.51	0.44	32.6	11.8	4.6
5	0.72	0.57	7.5	14.1	5.9	40	0.68	0.28	6.0	13.0	13.2
6	0.78	0.41	3.0	3.9	14.9	41	0.71	0.54	3.3	6.6	18.8
7	0.69	0.56	10.7	14.8	5.1	42	0.82	0.38	6.6	7.4	3.6
8	0.88	0.35	5.9	3.4	2.6	43	0.79	0.46	11.0	5.3	4.6
9	0.37	0.24	18.7	13.7	30.7	44	0.63	0.58	3.1	14.2	19.4
10	0.82	0.32	2.0	2.5	13.3	45	0.79	0.46	4.0	5.7	11.4
11	0.58	0.58	4.0	31.2	7.2	46	0.82	0.41	2.7	8.8	5.9
12	0.55	0.61	3.3	6.0	35.4	47	0.55	0.72	3.6	25.4	16.2
13	0.69	0.59	13.6	7.7	9.4	48	0.71	0.35	18.5	1.2	8.7
14	0.66	0.39	6.2	19.8	7.7	49	0.50	0.59	7.7	25.9	16.0
15	0.75	0.52	1.8	17.8	5.3	50	0.77	0.61	3.1	10.3	9.2
16	0.58	0.52	9.8	20.6	11.0	51	0.79	0.57	9.7	10.8	0.9
17	0.25	0.06	34.2	7.7	32.6	52	0.50	0.54	23.5	18.6	7.9
18	0.38	0.36	27.7	24.8	9.7	53	0.42	0.44	21.8	28.4	7.9
19	0.38	0.51	5.5	42.0	14.6	54	0.69	0.72	6.6	10.5	13.4
20	0.93	0.17	2.6	1.2	3.1	55	0.61	0.28	5.2	11.5	22.1
21	0.76	0.39	10.1	8.3	5.9	56	0.75	0.56	7.8	4.2	13.1
22	0.71	0.20	5.9	6.5	16.3	57	0.54	0.29	1.9	2.1	41.6
23	0.41	0.65	33.4	17.6	8.3	58	0.44	0.51	20.2	20.6	14.5
24	0.65	0.29	14.5	6.5	14.1	59	0.54	0.42	18.5	11.1	16.5
25	0.46	0.46	9.3	13.9	30.5	60	0.55	0.65	13.8	23.7	7.4
26	0.70	0.43	3.8	16.6	9.3	61	0.64	0.52	4.8	5.0	26.0
27	0.64	0.57	13.1	13.5	8.8	62	0.67	0.44	15.9	11.5	4.9
28	0.42	0.49	14.2	28.9	14.7	63	0.50	0.38	14.3	14.6	20.6
29	0.85	0.33	3.6	5.6	5.9	64	0.44	0.63	27.9	17.6	10.3
30	0.38	0.49	13.7	28.0	20.0	65	0.71	0.53	7.7	7.5	13.3
31	0.74	0.48	5.2	11.8	8.5	66	0.58	0.72	13.6	15.1	13.3
32	0.44	0.64	11.4	28.6	15.9	67	0.54	0.45	29.1	12.6	4.2
33	0.43	0.56	14.1	36.6	6.2	68	0.59	0.43	12.7	24.5	3.5
34	0.72	0.50	22.6	1.9	3.7	69	0.50	0.32	7.2	34.0	8.5
35	0.44	0.57	21.6	10.5	23.8	70	0.52	0.35	21.9	12.2	12.6