

Designing Model Membranes Instrument

Reliability Report

Scales for the Designing Model Membranes (MM) instrument's questions were constructed from a sample of 344 students completing the assessment (version MM-8A 9/13/10). Correct answers on the 27 questions were summed to calculate an "All" scale, which was tested for internal reliability using Post-test data. The "All" scale was found to have a Cronbach's α of .851 (n=187). The table below presents reliability information for the MM instrument's scales and items.

Scale	N of Students	# Items	Items	Reliability: Cronbach's α	Factors Extracted
All	187	27	1-27	.851	9
Bioengineering	224	5	3, 8, 11, 16, 25	.731	1
Survival Needs and Adaptation	222	6	5, 7, 9, 10, 14, 18	.587	2
Designs from Nature	220	7	13, 17, 19-23	.667	2
Membranes	202	10	1, 2, 4, 6, 12, 15, 22, 24, 26, 27	.656	4
Membranes in Nature	209	7	1, 2, 4, 6, 22, 26, 27	.559	2
Human-made Membranes	205	6	12, 15, 22, 24, 26, 27	.578	2