MA 1670 Chapter 7: Sampling Methods & the Central Limit Theorem Important Concepts & Skills

Section	Important Concept/Skill	Text Reference
7.1	State 5 reasons why a portion (sample) of a population may be selected.	p. 216
7.2	Differentiate between **simple random sampling**, **systematic random sampling**, **stratified random sampling**, and **cluster sampling**.	pp. 216-220
7.3	Define **sampling error**.	p. 221, left margin
7.4	Define the **sampling distribution of the sample means**.	p. 222, left margin
7.4	Construct a sampling distribution of the sample means for a given sample size.	pp. 223-224
7.4	Compare the population mean and the mean of a sampling distribution of the sample means for a given sample size.	p. 224 (bottom)
7.4	Compare the population dispersion and the dispersion of a sampling distribution of the sample means for a given sample size.	p. 224 (bottom)
7.4	State and explain the **Central Limit Theorem**	p. 226, left margin
7.4	State the minimum sample size needed for the sampling distribution of the sample means to be approximated by a normal distribution.	pp. 227, 233
7.4	Compute and explain the **standard error of the mean** (standard deviation of the sampling distribution of the sample means).	p. 232
7.5	Compute the z-score (z-value) of the sample mean when the population standard deviation is known.	p. 234
7.5	Apply the Central Limit Theorem to make predictions about and calculate probabilities for the sample means.	pp. 233-235
7.6	Compute and explain the **sample proportion**.	p. 236
7.6	Define the **sampling distribution of the sampling proportions**.	p. 236, left margin
7.6	Give the two conditions necessary for the sampling distribution of the sampling proportions to be approximated by the normal distribution.	p. 236
7.6	Compute and explain the **standard error of the proportion**.	p. 236
	Compute the *z*-score (*z*-value) of the sample proportion when the population standard deviation is known.	p. 236
7.6	Apply the Central Limit Theorem to make predictions about and calculate probabilities for the sample proportions.	pp. 235-237