Syllabus Addendum
Tennessee Licensure Standards
Knowledge & Skills Statements

1.2 Apply and adapt a variety of appropriate strategies to problem solving, including testing cases, estimation and then checking induced errors and the reasonableness of solutions.

1.5 Recognize and use mathematical ideas and processes that arise in different setting, with an emphasis on formulating a problem in mathematical terms, interpreting the solutions, mathematical ideas and communication of solution strategies.

1.7 Use technologies appropriately to develop understanding of abstract mathematical ideas, to facilitate problem solving and to produce accurate and reliable models.

1.10 Understand the dynamic nature of mathematics and its role in history, current events, and individual lives.

2.2 Establish an ability to estimate, select appropriate units, evaluate accuracy of calculations and make estimations of error arising from limitations in the technological representation of numbers and in measure.

6.1 Develop an understanding of the different methods of presenting data and the characteristics that determine the selection of the most appropriate method.

6.2 Use data and statistical thinking to draw inferences, make predictions, justify conclusions and identify and explain misleading uses of data.

6.3 Develop the concept of sample space and probability distributions. Perform simulations to address the development of sample space and distributions.

6.5 Explore independent and dependent events; establish the context and understanding for Bayes Theorem.

6.6 Use probabilistic and statistical processes to understand the accurate construction of experiments, collection of data, analysis of data and the production of logically consistent conclusions.

6.7 Understand the difference between univariate, bivariate and categorical data and methods of presenting and analyzing.

6.8 Describe the basic probability models and the relationship between these models and statistics. Include the development and use of Chi-square, binomial, normal and t-distributions.

6.9 Understand how sample statistics reflect population parameters and determine appropriate modeling. Explore informal inferences that can appropriately be drawn from sample statistics.

6.10 Produce data plots and curves of best fit using linear regression, polynomial, regression and exponential regression. Understand correlation and least-squares measurement of fit.

6.11 Know the characteristics of well-designed studies and understand the appropriate inclusion of randomness in a study.

6.12 Construct reports and descriptions of experiments that correctly incorporate and interpret confidence intervals.

6.13 Develop an informal/intuitive understanding of the Law of Large Numbers, establish methods of concretely illustrating the Law and address commonly held misconceptions related to the Law of Large Numbers.

6.14 Understand construction of statistically valid experiments, including data collection and sampling. Discuss the construction of appropriate hypothesis.

6.15 Discuss, evaluate and propose corrections for fallacious presentation of data and outcomes of experiments. Include specific examples from current print/web sources.

7.3 Use Venn Diagrams and tabular data to calculated probabilities. Include the use of Venn Diagrams in the analysis of arguments and quantifiers.