Baton Rouge, January 26, 2018

These are general guidelines to prepare for comprehensive exam corresponding to the Reliability/Survival part of the material in EXST7087.

1. Probability plotting
   (a) Understand the purpose of probability paper.
   (b) Know how to draw a cumulative distribution function on a given probability paper. In particular, have an understanding of the use of plotting positions.
   (c) Understand the properties of probability paper: which distribution functions plot as a straight line on on a given probability paper and which distributions plot as a non-linear functions on that probability paper.
2. For a given (completely specified) continuous cumulative distribution function, know how to compute cumulative probabilities, survival probabilities, quantiles, and hazard function values.
3. Understand the concept of a hazard function:
   (a) The theoretical definition and its practical interpretation.
   (b) Its usefulness in approximating conditional failure probabilities in an interval.
4. Have a clear understanding of the Kaplan Meier estimate (an related non-parametric methods). In particular, understanding the type of censored-data structures to which one can apply the estimator.
5. Understand the scale-shape parameterization for the Weibull, Exponential, and Fréchet models.
   (a) Identify the scale parameter and its role in the model. Identify the shape parameter parameter and its role in the model.
   (b) Interpretation of the parameters in the model.
6. Make sure that you can correctly use the single distribution JMP output to computed estimated failure probabilities, quantiles, estimated conditional probabilities, and model choice criteria.