

MS Module 7: Two-Sample t Test and Confidence Interval (overview)

(The attached PDF file has better formatting.)

Reading: §10.2: The Two-Sample t Test and Confidence Interval

If the populations are normally distributed but at least one of the sample is small, we use t distributions and t tests. The t distribution depends on the degrees of freedom, or the number of observations in the sample minus one. For the difference of means in two samples, we do not have an appropriate t distribution, since we do not have the degrees of freedom.

The textbook gives a formula for an approximate degrees of freedom. You need not know the justification in the textbook for this formula, but you must use it for final exam problems. Work through the exercises in the textbook and on the discussion forum so that you can apply the method on the final exam.

Pooled procedures assuming equal variances simplify the arithmetic, but verifying equal variances is hard. The textbook recommends using the two sample t test; the final exam problems follow this recommendation.