

**STATISTICS 4550**  
**NONPARAMETRIC STATISTICS**

In the late 1930s, a different approach to the problem of finding probabilities began to gather some momentum. This approach, known as nonparametric statistics, involved using simple and unsophisticated methods to find the desired probabilities, or at least a good approximation to those probabilities. Nonparametric statistical methods often involve less computational work and therefore are easier and quicker to apply than other statistical methods. A third advantage of nonparametric statistical techniques is that much of the theory behind the nonparametric methods may be developed rigorously, using no mathematics beyond high school algebra.

Let's consider a simple experiment to see if flint in area *A* tends to have the same degree of hardness as flint in area *B*. Four sample pieces of flint were collected in area *A* and five sample pieces of flint were collected in area *B*. They were ordered according to hardness

softest      A A A B A B B B B      hardest

Are the flints from areas *A* and *B* of equal hardness?

This and many more real life data will be studied in this course.

**Text.** One textbook which has been used recently is *Practical Nonparametric Statistics* by Conover.

**Marks.** While the exact formula may vary from year to year, it is typical to assign 50% of the final grade to the final exam, 30% to two term tests and 20% to homework.

**Calendar description. 4550 Non-parametric Statistics** covers inferences concerning location based on one sample, paired samples or two samples, inferences concerning scale parameters, goodness-of-fit tests, association analysis, tests for randomness.

Prerequisites: Statistics 3411, 3520, or 3521.

**Offered:** Contact the Deputy Head (Statistics) in the Department of Mathematics and Statistics for information regarding the scheduling of this course.