

# Statistical Techniques I

EXST7005

The F distribution

A large, 3D-rendered letter 'F' in a serif font, appearing to have a metallic or stone-like texture with shadows and highlights.

# The F test

- This test can be used to either,
  - ➔ test the equality of population variances - our present topic
  - test the equality of population means (this will be discussed later under ANOVA)
- The F test is the ratio of two variances (the ratio of two chi square distributions)
  - Given two populations
    - Population 1      Population 2
    - Mean                       $\mu_1$                        $\mu_2$
    - Variance                       $\sigma_1^2$                        $\sigma_2^2$

# The F test (*continued*)

- Two populations

- Draw a sample from each population

	Population 1	Population 2
– Sample size	$n_1$	$n_2$
■ d.f.	$y_1$	$y_2$
– Sample mean	$\bar{Y}_1$	$\bar{Y}_2$
– Sample variance	$S_1$	$S_2$