Example 1

An Engineer is interested in investigating the relationship between RF power and the etch rate for this cool. The objective of an experiment is to model the relationship between etch rate and RF power and specific power setting that will give a desired target etch rate. Test four levels of RF power 160, 180, 200 and 220 W. She decided to test five wafers at each level of RF power. The data is given as below;

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Power (W) | Observation | | | | |
| 1 | 2 | 3 | 4 | 5 |
| 160 | 575 | 542 | 530 | 539 | 570 |
| 180 | 565 | 593 | 590 | 579 | 610 |
| 200 | 600 | 651 | 610 | 637 | 629 |
| 220 | 725 | 700 | 715 | 685 | 710 |

1. Analyze the data.
2. Compare the treatment means using LSD method.
3. Use Tukey’s test to know the pirwise difference between treatment means (α = 0.05)
4. Test the hypothesis H0 : µ1 + µ2 = µ3 + µ4, H0 : µ1 = µ2 and H0 : µ1 + µ2 = 2µ3