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**SYNOPSIS IN MEDICAL STATISTICS**  
**SECOND YEAR STUDENTS, 4-th semester**  
**Academic year 2015/2016, winter semester**

1. Introduction to statistics. Population and sample. Types of studies.
2. The research process – planning, sampling, sources and types of bias.
3. Questionnaire design.
4. Sources and types of data. Summarizing and presenting data. Scales of measurement.
5. Descriptive statistics for categorical data – ratios, proportions, percentages, rates.
6. Descriptive statistics for quantitative data. Measures of central tendency – mean, mode, median.
7. Measures of spread – range, interquartile range, standard deviation, variance.
8. Data distributions. Normal distribution – characteristics. Non-normal distributions. The normal curve. Standard scores. Standard normal curve.
9. The concept of “norms” or “normal limits”. Percentiles.
10. Analyzing relationships. Correlation. Linear and non-linear correlation. Correlation coefficients.
11. Correlation and causation. Regression.
12. Introduction to inferential statistics and hypothesis testing. Types of hypotheses. Probability.
13. From sample to population. Confidence interval.
14. Analyzing differences among groups – chi-square.
15. Measuring the differences between group means – Student’s t-tests (one-sided and two-sided t-test).
16. Differences among group means: One-way analysis of variance.