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**SOCIAL MEDICINE AND BIOSTATISTICS EXAMINATION SYLLABUS**

**Biostatistics**

1. Statistics as a scientific discipline. Types and steps in a statistical observation.
2. Examination of qualitative indicators. Frequencies and proportions.
3. Methods of standardization.
4. Types of data and measurement scales.
5. Presenting data.
6. Summarizing data.
7. Descriptive statistics. Measures of the central tendency.
8. Measures of variability.
9. Probabilities – basic characteristics.
10. Types of distributions. Characteristics of the normal distribution.
11. Inferential statistics. Samples and population.
12. Confidence intervals. Estimation of population mean.
13. Statistical hypotheses testing - Parametric tests.
14. Statistical hypotheses testing – Non-parametric tests.
15. Analyzing of more than two samples. ANOVA.
16. Describing relationships. Regression analysis,
17. Describing relationships. Correlation.

**Social Medicine**

1. Health – definitions, aspects and models of health.
2. Determinants of health and disease.
3. Medical demography - terminology and indicators. Measuring population change. Sources of demographic data.
4. Describing populations – size and structure of the population. Types of age/gender population composition. Population pyramids. Aging of the population – trends and health impact. Demographic transition – stages.
5. Migration – types and factors. Health impact of migration.
6. Birth rate and fertility. Indicators, trends in developed and developing countries.
7. Population reproduction – indicators and trends.
8. Mortality – indicators and trends.
9. Infant, child and maternal mortality - indicators. Main causes of infant mortality in developed and developing world.
10. Life expectancy and complex indicators for burden of disease.
11. Measures of disease frequency (incidence and prevalence of disease). International classification of diseases.
12. Methods and sources for studying disease frequency. Disease registries.
13. Epidemiology – definition, aims, scope and application. Basic terms.
14. Observational study designs (ecological and cross-sectional studies). Design, planning and conducting of a survey. Application in public health.
15. Analytical study designs – application. Design, advantages and limitations.
16. Measures of effect (absolute risk, relative risk, odds ratio) and potential impact (attributable fraction of exposed and attributable fraction of the population).
17. Experimental study designs (randomized clinical trial). Designs, advantages and limitations.
18. Prevention – levels. Primary prevention – populational and high risk strategy – description and examples.
19. Screening – types and characteristics of the screening test.
20. Health promotion – history of the concept, basic strategies and action areas.
21. Health system – aims, elements, functions, models.

**Literature**

1. Tulchinsky T., Varavikova E. The new public health, 2nd edition <http://ebookee.org/The-New-Public-Health-Second-Edition-Repost-_922847.html>
2. R. Bonita, R. Beaglehole, T. Kjellström. Basic epidemiology <http://whqlibdoc.who.int/publications/2006/9241547073_eng.pdf>
3. Mircheva I., Dokova K. Biostatistics, Varna, MU – Varna, 2011

 Norman R, Steijner D. Biostatistics: The Bare Essentials <http://www.ebook3000.com/Biostatistics--The-Bare-Essentials_122400.html>