Proposal from the Indian Society for Medical Statistics for
Central Council of Homeopathy
Teaching of Biostatistics, Data Analysis, Demography, Informatics, etc.

Undergraduate (BHMS) Curriculum of Biostatistics, Data Analysis, Demography, Informatics, etc.	
Syllabus for Direct Degree course Extracts from the existing Regulations, 2013 - Latest available on their website	**Proposed by the Indian Society for Medical Statistics NOT SEEKING ANY INCREASE IN TEACHING – ONLY MORE MEDICAL FOCUS**
Each intern-student shall be made to learn importance of maintaining statistics and records, intern-student shall also be familiarized with research methodology. **Community Medicine** 4. Medical Statistics Principles and elements of vital statistics 9. Introduction to Computer Repertorization.	This is OK but to familiarize the intern with research methodology, s/he should be involved with some research project of the faculty of his/her choice. **Community Medicine** **4. Medical Biostatistics** FOR CLARITY, SPECIFY WHAT EXACTLY TO TEACH Medical uncertainties and need of biostatistics Clinical assessments – A. Normal range of medical parameters: Measure of central values (mean, median, mode), why and where to use each; need to assess variation (variance, SD and CV); need to explore statistical distribution of values (Gaussian and skewed distributions); proper interpretation of mean±2SD range as normal; concept of association and correlation Medical data – A. Sources of medical data; B. Incidence, prevalence, duration of disease and outcomes; C. Sensitivity-specificity and predictivity of medical tests Vital statistics **–** Various fertility and mortality rates, elements of demography 9. **Introduction to Computer Repertorization –** Records and fields in Excel database, introductory graphics for report preparation

Postgraduate MD(Hom) Curriculum of Biostatistics, Data Analysis, Demography, Research Methodology, Informatics, etc.	
Syllabus for Post Graduate Degree M.D. (Hom) Extracts from the existing Regulations, 2013	**Proposed by the Indian Society for Medical Statistics NOT SEEKING ANY INCREASE IN TEACHING**

- Latest available on their website	– ONLY MORE MEDICAL FOCUS
Part-IV SYLLABUSS **1Research Methodology, Bio-Statistics and History of Medicine –** Basic knowledge of medical statistics, Nature of classification of research work in Homoeopathy with the help of recent advances in statistics. Including **Elements of statistics:-** Introduction to biostatistics including definition and scope-- Use of biostatistics - merits or demerits. - Health information system in collection of data. - Frequency distribution table. - Presentation of data - tabular presentation, pictograms. - Graphical presentation. - Centering constants – mean, median and mode. - Measuring of variation range, interquartile range, average deviation, standard deviations and coefficient of variation. - Normal distribution. - Poisson and binomial distribution. - Standard error or mean. - Confidence limits. - "Z" Test. - "F" Test. - "T" Test paired and unpaired. - Chi-square test. - Sampling. - Correlation and regression	**The following details may be incorporated so that everyone knows what exactly should be taught and what is its importance in Homeopathy. This will be taught by a qualified teacher of Biostatistics with the assistance of senior faculty who are experience of research.** i) **Thesis skill**: Concept of scientific research, steps, writing skills, format / structure of Thesis – introduction, objectives, material & methods, results, discussions, key messages, limitations & references. ii) **Training in research methodology**: Steps in medical research, principles of medical ethics, formulating objectives and hypotheses, searching medical literature, research designs, sampling methods, sample size, data management, scoring, reporting results and limitations of scientific research. Nature of classification of research work in Homoeopathy **iii) Medical Biostatistics to do elementary research and to understand and critically evaluate published research paper**s **Introduction** (Medical uncertainties; Need to depend on probabilities; Simple rules of probability; Role of biostatistics in controlling and measuring uncertainties); Tabular and graphical presentation – where to use which diagram, including log-scale) **Clinical assessments –** A. Normal range of medical parameters: Measure of central values (mean, median, mode), why and where to use each; need to assess variation (variance, SD and CV); need to explore statistical distribution of values (Gaussian and skewed distributions, binomial distribution for proportions); proper interpretation of mean±2SD range as normal **Medical data –** A. Incidence, prevalence, duration of disease and outcomes; Relative risk (RR), attributable risk (AR), odds ratio (OR) and number needed to treat (NNT). B. Sensitivity-specificity of medical tests, Bayes rule for predictivity **Medical generalizations –** A. Sampling fluctuations; standard errors of mean and proportion; types of statistical generalizations (the concept of CI and tests of significance with their medical implications); null and alternative hypotheses; Type I and Type II errors and need to control them; statistical power and sample size. B. Comparison of means (Student t test, one-way ANOVA, Wilcoxon and Kruskal-Wallis test;

comparison of efficacies, RR and OR by chi-square test

Medical relationships – Need to study medical relationships; Simple linear and nonlinear regression and correlation, their validity in explaining and prediction; Criteria for causal inference

Basics of clinical trials – Phases of trials; Randomization and blinding

Introduction to software packages (SPSS, Epi-Info and Stata/SAS)

Half of one of the theory papers will be devoted to Biostatistics and Research Methodology. This part will be set by the teacher of Biostatistics and evaluated by him/her.

Thesis: No change required except that the students will be required to take a certificate from the teacher of Biostatistics that all biostatistical applications are correct.

Teaching Staff for Health Statistics, Medical Statistics, Demography, Research Methodology, etc. & Ancillary Staff for Data Entry, Data Analysis and Informatics Activities.	
Extracts from the existing Regulations – Latest available on their website	**Proposed by the Indian Society for Medical Statistics**
No teaching or ancillary staff provided in Schedule IV (UG) or Schedule V (PG) for biostatistics/research methodology/data analysis/informatics. There is a provision for guest faculty under which some colleges may be inviting external teachers.	Teaching of Biostatistics in all undergraduate colleges with no MD (Hom) will continue with part-time teacher not below the rank of Assistant Professor. However, all colleges with MD course must have a qualified teacher of Biostatistics. Besides teaching, this person will provide statistical and research methodology assistance to the faculty and PG students – thus improve the research environment and research level. S/He can also be in-charge of the medical record section of the hospital and of the computer system and website of the college. For this s/he will be provided a Technical Assistant. **Teaching Staff:** Assistant Professor – 1 (MSc in Statistics/Biostatistics/Medical Statistics/Health Statistics. Desirable: PhD and at least 2 years' research experience and training in Computers) **Non-Teaching Staff:** Technical Assistant – 1 (BCA or Graduate with Computer Science/Computer Applications)