

Course Modules:

Module 1

Research methods theory:

Basic assumptions underlying scientific research

Ethics in scientific research

Literature review and hypothesis formulation

Data collection methods

Measurement techniques & Sampling methods

Research designs

Apart from controlled trial designs (including randomized controlled trial designs-RCT), emphasis will also be given on case-control study design and prospective cohort design from contemplative science perspective. For example, studying the effect of advanced meditation (with monks is more feasible from case-control design than RCT). Similarly naturalistic cohort long term follow-up studies are optimal from sampling perspective to study the effect of yogic/meditative lifestyle.

Procedure for conducting research experiment

Control techniques in experimental research

Mixed methods research

Emphasis on first person (for subjective experience) and third person perspective-based assessments will be discussed. Special emphasis on experience sampling method and its relevance for contemplative science will be discussed

Scientific writing

Tutorial sessions

Randomization procedure

Scientific illustrations-Inkscape and blender

Reference management-Zotero

Qualitative data coding-Qualcoder

Note: All the tutorial sessions will be taught with Yog/Meditation based dataset for better understanding of the concepts

Module 2

Statistics theory

Data representation-tables & figures

Descriptive statistics

Key ingredients for inferential statistics

Hypothesis testing, statistical significance and decision errors

T tests

ANOVA

Correlation

Regression

Chi square test

Linear mixed model analysis (LMM)

Distribution free statistics

Tutorial sessions (Using Jamovi & R-open-source free software)

Data wrangling

T tests

ANOVA

Correlation & Regression

Chi square test

LMM

Sample size calculation-G power

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