

SYSTEMATIC REVIEW PREMIUM COURSE CURRICULUM

The Systematic Review Course

Lesson 1: How to Start a Systematic Review

The first lesson will discuss the early stages of building a systematic review, including answers to the following questions:

- What are the differences between a literature review, a systematic review and a meta-analysis?
- How do I know if my systematic review idea is feasible?
- What is a PICO question?
- What are the steps to create a search strategy?
- Where do I search for studies?
- How do I find research ideas?
- Examples and exercises

Total video length without quizzes and exercises: [1h 22 min](#)

Lesson 2: Inclusion and Exclusion

The second lesson will go over how to formulate your inclusion and exclusion criteria before you begin sorting through your studies.

The lesson will help answer the following questions:

- What is the definition of inclusion and exclusion criteria?
- How do I create a study selection criterion?

- What are common selection criteria?
- Where do I start to generate my search?
- How do I screen my studies?
- Examples and exercises

Total video length without quizzes and exercises: [1h 6 min](#)

Lesson 3: Variable Selection

The third lesson will cover how to choose your variables for data abstraction.

The following points will be discussed:

- Common variables that are used in all studies
- Methods to create your variable list, including different sources
- Examples and exercises in which you will build a variable list for studies

Total video length without quizzes and exercises: [45 min](#)

Lesson 4: Data Collection

This lesson will go over effective methods for data collection and what type of data can be collected.

The following points will be discussed:

- Consistency in data collected, including mean + standard deviation vs. frequency + percent
- How to keep your data clean
- Steps in making your life easier for data analysis

- Methodically collecting data to streamline analysis
- Examples and exercises in which you will extract data from studies

Total video length without quizzes and exercises: 49 min

Lesson 5: Conducting Analysis

This is the meat of your systematic review; this will define the value of your systematic review/meta-analysis. The purpose of this lesson is to explain how to easily analyze your data.

The following points will be discussed:

- The differences in odds ratio and mean difference
- How to clean up your data to export into a statistical software
- Different statistical programs you can use for analysis
- Examples and exercises on how to perform meta-analysis using statistical programs with categorical and continuous variables

Total video length without quizzes and exercises: 50 min

Lesson 6: Assessing Risk of Bias

Importantly, each study included in a meta-analysis may have a different study design than another. Therefore, authors may want to evaluate each study's risk of bias so that the pooled results may be interpreted with caution.

The following points are discussed:

- Effectively utilize the Newcastle-Ottawa Scale to assess risk of bias for observational studies
- How to evaluate risk of bias for clinical trials
- What is the GRADE assessment for pooled results?

Total video length without quizzes and exercises: [60 min](#)

Lesson 7: Manuscript Writing

Many find manuscript writing the most challenging part of research projects. The purpose of this lesson is to make manuscript writing ridiculously simple and turn it into the most enjoyable part of the research journey. We will cover how to write a manuscript's introduction, methods, results, discussion, and conclusion in addition to examples and exercises you will be working on

Total video length without quizzes and exercises: [4h 6 min](#)

The Comprehensive Research Course

This Course is composed of video lectures explaining how to perform the analysis on the statistical software (SPSS and IMP)

Lesson 1: How to Start a Research Project?

This lesson will discuss the preliminary stages of building a research project, including the following topics:

- What are the different study designs?
- What is a research question?
- How to evaluate research ideas?
- How To Find Research Ideas?
- How To Perform A Quick Literature Review?
- How To Perform A Detailed Literature Review?
- What Is The IRB?

What Is The IRB?

Total video length without quizzes and exercises: 1 h 50 min

Lesson 2: Variables and Data

This lesson will focus on how to build a variable list for your research project and what you need to do prior to collecting data, including the following topics:

- Finding the patients
- Identifying the variable list
- Choosing the definitions
- Identifying the team
- Identifying the tasks
- Identifying authorship

- Collecting the data

Total video length without quizzes and exercises: 1 h 35 min

Lesson 3: Data is Complete, Now What?

This lesson will discuss how to prepare and interpret your data, including the following topics

- Cleaning the data
- How to make the job of your statistician easier?
- Interpreting categorical data
- Interpreting continuous data

Total video length without quizzes and exercises: 40 min

Lesson 4: Manuscript Writing: Before You Start Writing

Manuscript writing does not have to be daunting. This lesson will go over strategies to help you plan and optimize the manuscript writing process.

Total video length without quizzes and exercises: 18 min

Lesson 5: Manuscript Writing | Introduction

This lesson will discuss the details of how to write the introduction section of the manuscript, including the following topics:

We will start by discussing the details of how to write the introduction section of the manuscript.

The following points will be discussed:

- The outline
- Examples of well-written and poorly written introductions
- Efficiency in writing
- An example of how to start with a draft and the subsequent changes made
- Verb tense
- The gap in knowledge
- The study hypothesis
- Linking words
- Reference managers
- Plagiarism and grammar checks

Total video length without quizzes and exercises: 1 h 6 min

Lesson 6: Manuscript writing | Methods

This lesson will discuss how to write the methods section of the research paper, including the following topics:

The following points are included:

- What to include in the methods section
- Tips for writing the methods
- The statistical analysis paragraph of the methods
- Discussion of the methods section using 4 study examples

Total video length without quizzes and exercises: 47 min

Lesson 7: Manuscript writing | Results

This lesson will discuss the details of how to write the results section of the research paper.

The following points are included:

- How to create your tables
- Discussion of tables using study examples
- Figures (bar graphs, box plots, Kaplan-Meier curves)
- What to include in the results section
- Tips for writing the results section
- Discussion of the results section using two study examples
- Commonly used verbs and phrases in the results section

Total video length without quizzes and exercises: [54 min](#)

Lesson 8: Manuscript writing | Discussion

This lesson will discuss how to write the discussion section of the research paper, including the following topics:

- The structure of the discussion section and tips for writing an effective discussion.
- The opening paragraph
- Comparison to prior literature (similarities and differences)
- Summarizing prior studies
- Paraphrasing
- Interpretation of your study results
- Implications of your research findings
- Limitations of your study
- Future directions

- Study conclusion
- Discussion of the above-mentioned points using several study examples

Total video length without quizzes and exercises: [1 h 38 min](#)

Lesson 9: Abstracts

Choosing the right journal is a critical step for your research project. Submission is also a long process, often requiring revision. This lesson will go over the submission process, including the following topics:

- Structured vs. unstructured abstracts
- Abstract section
- How to write an abstract
- Visual abstracts
- Conference abstracts

Total video length without quizzes and exercises: [51 min](#)

Lesson 10: Submission and Acceptance

Choosing the right journal is a critical step in your research project. Furthermore, submitting your manuscript is one step in the long process of publishing your research project. More likely than not you will receive questions from the reviewers. This lesson will go over the steps after you are done with your manuscript writing including the following:

- Choosing the right journal.
- What if your manuscript is rejected?

- Responding to reviewers.

Total video length without quizzes and exercises: [57 min](#)

Lesson 11: Poster Presentations

Presenting your research at conferences is essential to increase the visibility of your science, share your findings with the scientific community, and establish connections within the field. That's why we dedicated a lesson to show you how to create an interactive effective poster presentation. The following points will be discussed in this lesson:

- Structure of a poster presentation
- Tips on how to create poster presentations
- Poster Examples
- New way of making posters
- How to present a poster
- Poster title
- Poster templates

Total video length without quizzes and exercises: [1 h 21 min](#)

Lesson 12: Literature Review

This lesson will discuss how to write a literature review from beginning to end, including the following topics:

*Note: This lesson is only available for subscriptions of >3 months.

- Steps for writing a literature review
- Systematic review vs. comprehensive literature review

- Tips for writing a literature review
- Defining the question
- Literature search
- The outline
- Writing the introduction
- The structure of a paragraph
- How to write a paragraph for a literature review
- Multiple exercises and assignments

Total video length without quizzes and exercises: 1 h 33 min

Lesson 13: How to publish >20 manuscripts in one year?

This lesson will cover the secrets of being productive during a research year including a detailed discussion of the following:

- Efficiency
- Time management
- Multitasking
- Mentorship
- Teamwork
- Quantity vs. quality

Total video length without quizzes and exercises: 42 min

The Medical Statistics Course

This course is composed of video lectures explaining how to perform the analysis on the statistical software (SPSS and JMP). The course also has ample exercises and quizzes testing your understanding of statistics and your ability to perform statistical analysis. You will have access to multiple datasets which you can use to perform the analysis shown in the videos and exercises.

Lesson 1: Introduction to statistical analysis

The first lesson will serve as an introduction to performing statistical analysis. You will also learn how to prepare your data before starting the descriptive and comparative analysis. The following will be discussed in detail:

- How to clean your data
- How to import your data into the statistical software
- Types of variables
- How to organize and code your data
- Formulas
- Combining datasheets

Videos: 2h/40min JMP // 1h/12min SPSS

Exercises: 9 JMP / 9 SPSS

Lesson 2: Descriptive analysis

This lesson will discuss how to describe and visualize your data. The following points will be discussed:

- Descriptive analysis of categorical data
- Descriptive analysis of numerical data

- How to assess normality of data distribution
- When to choose median vs. mean
- 95% confidence interval
- How to perform sub-analysis
- Descriptive analysis from published studies □ How to present your data in a research article
- How to visualize your data using bar graphs, histograms, and box plots

Videos: 1h/52min JMP // 1h/45min SPSS

Exercises: 6 JMP / 6 SPSS

Lesson 3: Hypothesis testing for categorical variables

This lesson will show you how to analyze your categorical variables using both parametric and non-parametric tests. The following topics will be covered:

- Introduction to hypothesis testing
- Chi-squared test
- Fisher's exact test
- 2×2 table and RxC table
- Relative risk and odds ratio
- Statistical errors
- How to present your data in a research article
- Hypothesis testing for categorical variables from published studies

Videos: 1h/12min JMP // 1h/4min SPSS

Exercises: 7 JMP / 7 SPSS

Lesson 4: Hypothesis testing for numerical variables

This lesson will show you how to analyze your numerical variables using both parametric and non-parametric tests. The following topics will be covered:

- Comparing means of two groups
- T-test and Mann–Whitney U test
- Comparing means of >2 groups
- One-way ANOVA and Kruskal–Wallis test
- Multiple comparisons tests
- Comparing means of two paired groups
- Paired t-test and Wilcoxon signed-rank test
- How to present your data in a research article
- Hypothesis testing for numerical variables from published studies

Videos: 1h/34min JMP // 1h/34min SPSS

Lesson 5: Power analysis and sample size calculation

This lesson will discuss how to calculate the sample size required to achieve statistical significance before you start your research study. The following points will be discussed:

- Introduction to power analysis
- The relationship between sample size, power, standard deviation, and effect size
- How to perform power analysis for two means
- How to perform power analysis for >2 means
- How to perform power analysis for two proportions

Videos: 23min JMP // 26min SPSS

Lesson 6: Simple linear regression

This lesson will discuss how to analyze a numeric predictor and a numeric outcome using simple linear regression and correlation analysis. This lesson will cover the following topics in detail:

- Assumptions of linear regression
- Scatter plots for linear regression
- Methods of linear regression
- Assessing the regression fit
- Adjusted R square
- Standardized and unstandardized beta coefficients
- Correlation analysis: Spearman and Pearson
- Correlation coefficient
- How to present your data in a research article

Videos: 43min JMP // 1h/13min SPSS

Lesson 7: Multiple Linear regression

This lesson will go over analyzing multiple numeric and categorical predictors and a numeric outcome using multiple linear regression. The following points will be discussed:

- Assumptions of multiple linear regression
- Backward, forward, and stepwise model selection
- Assessing the regression fit
- Adjusted R square
- Standardized and unstandardized beta coefficients
- How to present your data in a research article

Videos: 53min JMP // 1h/4min SPSS

Lesson 8: Logistic regression

This lesson will teach you how to analyze multiple numeric and categorical predictors and a categorical outcome using multiple linear regression. We will discuss the following:

- Assumptions of logistic regression
- Methods of logistic regression
- Considerations for numeric predictors
- Odds ratios and 95% CI
- Hosmer-Lemeshow goodness of fit
- How to present your data in a research article

Videos: 1h/2min JMP // 1h/21min SPSS

Lesson 9: Survival analysis

This lesson will go over time-to-event analysis including a discussion of the following:

- Introduction to survival analysis
- Kaplan-Meier curves
- The log-rank test and Wilcoxon test
- Hazard ratio
- Cox proportional-hazards model
- How to present your data in a research article
- Survival analysis from published studies

Videos: 1h/10min JMP // 1h/17min SPSS