# R LaTeX101T: Five Days Workshop on Effective Tools for Academic & Research Documentation

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## Course Description

*Workshop on Effective Tools for Academic Documentation* is a five days hands-on training programme specially designed for academicians and researchers. In this course advance statistical tool- R and the popular scientific document preparation tool -LaTeX will be discussed.

This course will be executed in the form of an online workshop. There will be short quiz, assignments and final project reports of a selected themes. The participants with at least 75% score in the assessments will be eligible for an e-certificate.

## Required Materials

- Course notes available on Canvas LMS. A laptop/ desktop with internet connectivity is the main requirement for this workshop.

## Prerequisites/Co-requisites

Prerequisites: Basic computer knowledge, fundamentals of descriptive statistics, basic knowledge in typesetting of academic documents.

## Course Objectives

Upon successful completion of this workshop the participant will be able to:

1. Learn R programming for EDA
2. Use R software for statistical analysis of research data
3. Learn the advanced typesetting architecture for scientific documents
4. Use LaTeX to prepare journal articles, academic reports and thesis
5. Practice academic process automation

## Course Structure

### Syllabus

**Module-1**
Introduction to R programming- structure of R, basic functions, mathematical operations

**Module-2**
Data processing, exploratory data analysis (EDA)- tools for visualization.

**Module-3**
R for academic documentation- concept of note book and markdowns, creating scientific note books using R, R markdown options, Presentations- beamer, ioslides, html5 and slidy presentations. Report generation- html, pdf and word formats.

**Module-4**
Academic documentation- frame work for academic documents, advanced tools for academic typesetting- LaTeX, BibTeX, jabRef. Basics of LaTeX typesetting. Mathematical drawings with LaTeX.

**Module-5**
Merging LaTeX with R- Generating high quality academic documents- article, report, book, leaflets, presentations. Academic Process Automation using R and LaTeX.

### Class Structure

**Day 1:** Module-1 in hands-on training format. There will be four sessions- two in forenoon and two in afternoon.

**Day 2:** Module-2 in hands-on training format. There will be four sessions- two in forenoon and two in afternoon.

**Day 3:** Module-3 in hands-on training format. There will be four sessions- two in forenoon and two in afternoon.

**Day-4** Module-4 in hands-on training format. There will be four sessions- two in forenoon and two in afternoon.

**Day-5** Module-5 in hands-on training format. There will be four sessions- two in forenoon and two in afternoon.

### Assessments

Assignments and quiz will be available through the course website. Participants are expected to complete them after the regular class sessions.

#### Hands-on sessions

After each session, the participants are expected to submit their work in the form of 'html'/ 'pdf' file in the Canvas LMS.

There will be short quiz after each session through Canvas.

#### Lab

The lab sessions will be in R / LaTeX cloud platforms. The markdown files should be submitted through Canvas for evaluation.

#### Class Project

Prepare a report using R/ LaTeX based on the theme given by the course instructor. The soft copy of the report should be submitted through Canvas for evaluation.

### Grading Policy

The typical Canvas grading scale will be used. The organizers reserve the right to curve the scale dependent on overall class scores at the end of the course. Any curve will only ever make it easier to obtain a certain letter grade. The grade will count the assessments using the following proportions:

- **60%** of your grade will be determined by submission of course work sheets (20% each).
- **20%** of your grade will be determined by performance in quiz.
- **20%** of your grade will be determined by your end project report submission.

## Course Policies

### Attendance Policy

Attendance is expected in all hands-on and lab sections.

### Policies on Incomplete Grades and Late Assignments

If an extended deadline is not authorized by the instructor or the course coordinator, an unfinished incomplete grade will automatically change to an F after proper notifications. 'Incompletes' that change to F will count as an attempted assignment on transcripts. The burden of fulfilling an incomplete grade is the responsibility of the participant.

Late assignments will be accepted for no penalty if a valid excuse is communicated to the instructor before the deadline. After the deadline, assignments will be accepted for a 50% deduction to the score up to 1 day after the deadline. After this any assignments handed in will be given 0.

### Academic Integrity and Honesty

Participants are required to comply with the institution policy on academic integrity. Don't cheat.