



OLLSCOIL NA
GAILLIAMHE
UNIVERSITY
OF GALWAY

An Institiúid Cúrsa Saoil
& Sochaí
Institute for Lifecourse
& Society

ENABLING
EQUITY
ACROSS THE
LIFE COURSE

Institute for Lifecourse and Society - ILAS *International Research Training Series*



Introduction to R, data visualisation and linear mixed-effects models

This course has been initiated by the ILAS based *Centre for Applied Linguistics & Multilingualism (CALM)*. The course introduces participants to statistical analysis and data visualisation using R. It covers the fundamentals of R programming, basic data structures, and data visualisation with a focus on ggplot2, including graphics, aesthetics, layers, and statistical elements. Full course details are outlined in the schedule below.

This course is suited to researchers, postgraduate students, analysts, scientists, and professionals seeking to develop practical R-based data analysis skills, strengthen statistical expertise, and apply quantitative methods in research and decision-making.

DATE: 14th & 15th September 2026

TIME: 10:00 - 16:00 daily

VENUE: Room G006, ILAS, University of Galway, H91 C7DK

[Register here](#)



Course Outcome

By the end of the course, participants will be able to use R to perform statistical analyses, create effective data visualisations, and apply linear and mixed-effects models to real-world datasets. They will understand how to interpret model outputs, evaluate model performance, and make informed decisions when selecting and refining statistical models. These skills can be applied in professional and research settings to analyse complex data, support evidence-based decision-making, and generate meaningful insights to inform practice.

INVITATION

Schedule – Monday, 14th September 2026

Time	Description
09:30 – 10:00	Registration
10:00 – 10:15	Welcome & Introduction <i>Dr Stanislava Antonijevic-Elliott, Centre for Applied Linguistics & Multilingualism, Institute for Lifecourse and Society.</i>
Introduction to R Presented By: <i>Prof. Dušica Filipović Đurđević, University of Belgrade</i>	
10:15– 11:30	• Basic logic of doing statistics in R • Basic logic of R programming language • Basic data structures
11:30 – 11:45	Break
11:45 – 13:00	• Basic logic of doing statistics in R • Basic logic of R programming language • Basic data structures
13:00 – 14:00	LUNCH
Data visualization in R with a focus on the package ggplot2 Presented By: <i>Prof. Dušica Filipović Đurđević, University of Belgrade</i>	
14:00 – 15:15	• Graphics in baseR and lattice • Basic logic of ggplot2 graphics • Working with aesthetics, layers, stats, geoms, etc.
15:15 – 15:45	Discussion & Questions
15:45 – 16:00	Close

Schedule - Tuesday, 15th September 2026

Time	Description
10:00 - 10:15	Welcome & Introduction
Introduction to Linear mixed-effects models <i>Presented By: Prof. Dušica Filipović Đurđević, University of Belgrade</i>	
10:15- 11:30	- Linear regression in R - Interpreting coefficients in general Linear Models (cases of single categorical predictor, single numerical predictor, multiple categorical predictors, multiple numerical predictors, categorical and numerical predictors)
11:30 - 11:45	Break
11:45 - 13:00	- Basic logic of mixed-effects regression: the independence assumption and why it fails - Fixed vs. random effects - Partial pooling; - Random intercepts and slopes; - Advantages of mixed-effects regression
13:00 - 14:00	LUNCH
Linear mixed-effects models – illustrative examples <i>Presented By: Prof. Dušica Filipović Đurđević, University of Belgrade</i>	
14:00 - 15:15	- Checking the distributions - Dealing with multicollinearity of predictors - Model-fitting strategies - Choosing the best model - Choosing the best random-effects structure - Model diagnostics
15:15 - 15:45	Discussion & Questions
15:45 - 16:00	Close



**Prof. Dušica
Filipović-Durđević**

Dr Dušica Filipović-Durđević is a Full Professor at the Department of Psychology at the Faculty of Philosophy, University of Belgrade. Her research career is closely intertwined with quantitative methodology and the application of statistical modelling in cognitive science. She first trained in R under Harald Baayen at the Max Planck Institute for Psycholinguistics in 2006 and continued her methodological development in 2022 through advanced training in frequentist statistics at the Fifth Summer School on Statistical Methods for Linguistics and Psychology at the University of Potsdam.

Beyond standard statistical techniques, her work draws on linear mixed-effect models, generalized additive mixed models, discriminative learning models, machine learning, distributional semantic analyses, and information-theoretic measures. She has co-authored methodological papers directly addressing statistical best practices in psychology. Her research interests sit at the intersection of cognitive psychology, language processing, and computational modelling – an approach that naturally bridges statistical methodology and substantive questions about how the mind works.



**Dr Stanislava
Antonijević-Elliott**

Dr Stanislava Antonijević-Elliott acquired her PhD in Psychology (2003) at the University of Belgrade (Serbia). She started her academic career as a teaching assistant at the University of Novi Sad (Serbia) in 1995. She was a research fellow funded by Deutsche Akademische Austauschdienst (DAAD) scholarship at the Max-Planck Institute for Cognitive Neuroscience in Leipzig in 1997 and a visiting research fellow at the University of Leipzig (Germany) 1999-2004. Before joining the Discipline of Speech and Language Therapy at the University of Galway in 2006, she worked as a research assistant at the Ludwig-Maximilians University in Munich (Germany). She was a founding member of the Centre for Applied Linguistics and Multilingualism (CALM) at the University of Galway and is the co-director of the centre since 2021. Her research interest focusses on language processing and linguistic diversity including bi- and multilingualism, use of language in socially and economically diverse groups, and comparison between typical and atypical language acquisition.

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- Centre for Applied Linguistics & Multilingualism (CALM)
- Community Engaged Research in Action (CORA)
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