

PWANI UNIVERSITY – KEMRI WELLCOME TRUST R and RStudio Workshop 2015

WEEK ONE:- DAY ONE	
Time	Description
9.20 – 10.00am	Opening of workshop
10.00 – 10.30am	Outline of course & describing data, types and outcomes
	BREAK
11.30 – 1.00pm	Introduction to ‘R’ and R Studio
	LUNCH
2 – 3.30 pm	Introduction to ‘R’ and R Studio
	BREAK
4 – 4.30 pm	Introduction to ‘R’ and R Studio
<u>DAY TWO</u>	
8.30 – 10.00am	Review of Monday’s activities
10.00 – 10.30am	Measures of data-brief lecture
	BREAK
11.30 – 1.00pm	Numerical explorations: means, SD; use R as calc.
	LUNCH
2.00 - 3.00pm	Practical 1
3.00 – 3.30 pm	Review of solutions to Practical 1
	BREAK
4.00 – 5.00pm	Recap of the day’s activities
<u>DAY THREE</u>	
Time	Description
8.00-9.00am	Review of assignment and other help
9.00- 9.30am	Graphs- brief lecture
9.30 – 10.30am	Graphical exploration of data
	BREAK
11.00-12.00pm	Practical on graphs
12.00pm-1.00pm	Review of practical on graphs
1 – 2.00pm	LUNCH
2.00pm- 2.30pm	Introduction to confidence intervals
2.30 – 3.00pm	Practical 3 on R and deskwork
	BREAK
3.00-3.30pm	Review of solutions to Practical 3
3.30pm-4pm	T-test for single and paired data t-test for unpaired data, testing two means
4.00-5.00pm	Practical 4 and solutions to practical 5

DAY FOUR

8.00 – 9.00am	Review of assignment and other help
9.00 – 9.35am	Binomial distribution: proportions, SE, 95%CI
	hypothesis testing for single proportion
9.35 – 10.30am	Difference in proportions, SE, 95% CI and hypothesis testing for a difference proportion
	BREAK
11.00-11.30am	Chi-squared tests and analy. contingency tables
11.30 – 1.00pm	Practical 5 and review
	LUNCH
2.00 – 2.30pm	Effect estimated for binary data
	RR, OR, 95%CI of RR and OR
2.30-5.20pm	Practical 6 and 7 and review
	Day 5
8.00 – 9.00am	Assignment solutions and other help
9.00 – 9.30am	Continuation with help on assignments
9.30 – 9.45am	Risks and rates: person time
9.45 – 10.00am	Confidence interval for a rate
10.00 – 10.30am	Deskwork -practical 8
	BREAK
11.00 – 11.20am	Comparing two rates- rate ratio Confidence intervals for rate ratios
11.20 – 11.40am	Making inferences from analysis
11.40 – 12.20pm	Practical 9
12.20 – 1.00pm	Review of solutions of practicals
	LUNCH
2.00 – 2.30pm	Plotting the data: assessing correlations
2.30 – 3.00pm	Correlation
3.00 – 4.00pm	Practical 10
4.00 – 5.00pm	review of solutions for practical 10

Week 2

	DAY 1
8.00 – 9.00am	assignment and other help
9.00 – 9.50am	ANOVA
9.50 – 10.30am	Practical 11 – ANOVA
	BREAK
11.00 – 11.45	Review of solutions for practical 11
	LUNCH

2.00-2.30pm	Linear regression
2.30 – 3.00pm	Practical and solutions for linear regression
3.00 – 4.00pm	Diagnostics- residuals and model fit
	DAY 2
8.00 – 9.00am	Assignments and other help
9.00 – 9.30am	Logistic model to estimate OR from binary exposure
9.30 – 9.45 am	Test null hypothesis of no exposure for binary exposure
9.45-10.30 am	Practical - logistic models for binary variables
	BREAK
11.00-11.45am	Log. Regression to estimate OR for exposure with >2 levels
11.45-12.15pm	Test hypothesis of no effect for each of the different levels
12.15 – 1.00pm	Practical-log. Models for variables with >2 levels
	LUNCH
2.00 – 2.30pm	Application of log.model on an unmatched case-control study
2.30 – 3.45pm	Practical - interpretation of 'R' output
3.45 – 4.00pm	Effect modification - Likelihood ratio tests
4.00- 4.30pm	Practical
4.30- 5.00pm	Summary for the day
	Day 3-
8.00 – 9.00am	assignments and other help
9.00-9.30am	Recap of time-to-event data
9.30 – 9.45am	Classical analysis of rates
9.45 – 10.30am	Poisson regression for rates + practical
	BREAK
11.00-11.45am	Hypothesis testing in poisson regression
12.15-1.00pm	Desk work
	LUNCH
2.00-2.30pm	Recap of time-to-event data
2.30-3.45pm	Practical- analysis of events over time
3.45-4.00pm	Solutions to practical
	Day 4-
8.00-9.00am	Assignments and other help
9.00-9.30am	Principles of multivariable regression analysis
9.30-10.00am	introduction- Interaction/effect modification
10.00-10.30am	Detection/interpretation of interaction & effect modification Effect modification and test for linear trend in Poiss. Regres
	BREAK
11.00-12.15pm	Practical
12.15- 1.00pm	Confounding and stratification
	LUNCH
2.00-2.45pm	Confounding II (logistic regression analysis)

2.45-4.00pm	Practical - handling confounding
4.00-4.30pm	Summary of day's activities
	<u>Day 5</u>
8.00-9.00am	assignments and other help
9.00-9.20am	Package management, Reproducible research including LaTeX and Rmarkdown
9.20-10.15am	Where you can find help ,support, information + SWIRL
	BREAK
11.00-12.00pm	Open for individual/group assistance
12.00 – 1.00pm	Summary, certificates and closing remarks
	THE END