RESEARCH METHODOLOGY & STATISTICS WORKSHOP

28-31 October 2013

Day 1	Title	Learning Outcome *At the end of the session, students should be able to*	Instructor
0830 – 0900	Registration		
0900 – 1000	Justification & conceptual framework	1. Describe the rationale of starting a research 2. Identify important & relevant variables for the research 3. Describe and summarise relationship of outcome and explanatory variables of the research	AP Dr. Jamalludin Ab Rahman
1000 – 1030	Morning break		
1030 – 1130	Research design I (Observational)	1. Describe and compare observational vs. experimental research – Provide examples from literatures 2. Describe and compare cross-sectional, case-control & cohort study	Dr. Razman Mohd Rus
1130 – 1300	Research design II (Lab, Animal & Clinical Trial)	1. Describe design of experimental study – experimental vs. quasi experimental, randomised, matching – Provide example from famous published papers 2. Describe animal study – ethic, animal model, animal to human inference 3. Describe lab study specimen handling etc	Dr. Zunariah Buyong
1300 – 1400	Lunch break		
1400 – 1500	Sampling & sample size	1. Describe importance of sampling 2. Compare types of sampling method 3. Describe factor affecting sample size 4. Calculate sample size	AP Dr. Jamalludin Ab Rahman
1500 – 1700	Literature review and managing references with EndNote	1. Search for references using Google Scholar, online databases or using endNote 2. Save and organise their references using EndNote 3. Insert the references from EndNote into their Microsoft Word document	AP Dr. Ahmad Razali Md Ralib

Day 2	Title	Learning Outcome *At the end of the session, students should be able to*	Instructor
0830 – 1000	Planning for data collection & statistical analysis	1. Describe the variables used in the research (Able to define the variables, state the level of measurement, precision of measurement, formula used if any, and finally summarise all the variables in one data dictionary) 2. Choose best method to collect data (questionnaire – self filled vs. interview vs. guided) 3. Validate the research instruments	Dr. Niza Samsuddin
1000 – 1030	Morning break		
1030 – 1130	Writing proposal	1. Describe the components of a research proposal 2. Highlight important points when writing for proposal 3. Write a research proposal	Dr. Razman Mohd Rus
1130 – 1300	Applying & managing research grant	1. Know the options of research grant 2. Describe the component of grant request proposal 3. Manage the research grant	Prof. Dr. Ahmad Hafiz Zulkifli
1300 – 1400	Lunch break		
1400 - 1500	Concepts in statistical analysis	1. Describe populations vs. sample 2. Describe level of measurements 3. Describe causality 4. Describe Normal distribution 5. Differentiate descriptive & analytical statistics	AP Dr. Jamalludin Ab Rahman
1500 – 1700	Descriptive analysis	1. Describe data (mean, median, standard deviation, IQR) 2. Present the results in a proper table or figures	Dr. Htike Myat Phyu

Day 3	Title	Learning Outcome *At the end of the session, students should be able to*	Instructor
0830 – 1000	Bi-variable analyses I (t-test, chi-square)	1. Analyse data using t-test and chi-square 2. Present the findings	Dr. Htike Myat Phyu
1000 – 1030	Morning break		
1030 – 1130	Bi-variable analyses II (One-way ANOVA)	1. Analyse data using one-way ANOVA 2. Present the findings	Dr. Htike Myat Phyu
1130 – 1300	Bi-variable analyses III (Kruskall-Wallis, Mann-Whitney U, Correlation)	1. Analyse non-parametric data 2. Present the findings	Dr. Htike Myat Phyu
1300 – 1400	Lunch break		
1400 – 1700	Bivariable analyses IV (Paired t-test, Mc Nemar)	1. Analyse paired data 2. Present the findings	Dr. Htike Myat Phyu

Day 4	Title	Learning Outcome *At the end of the session, students should be able to*	Instructor
0830 – 1000	Concepts of multivariate analyses	1. Describe causality and multi factorial 2. Describe covariance & correlation 3. Describe multivariate normality	AP Dr. Jamalludin Ab Rahman
1000 – 1030	Morning break		
1030 – 1130	Multivariate analyses I (Linear regression)	1. Analysed data using Linear Regression 2. Interpret and report the analysis	AP Dr. Jamalludin Ab Rahman
1130 – 1300	Multivariate analyses II (GLM)	1. Analysed data using ANOVA, MANOVA, ANCOVA, MANCOVA & Repeated ANOVA 2. Interpret and report the analysis	AP Dr. Jamalludin Ab Rahman
1300 – 1400	Lunch break		
1400 – 1700	Multivariate analyses III (Logistic regression)	1. Analysed data using Binary Logistic Regression 2. Interpret and report the analysis	AP Dr. Jamalludin Ab Rahman