

Proposed schedule for course over six half days (3.5 hours each), Singapore Jun-July 2022

Day, Lecture, Exercise	Topic	Reading*	
Session 1 Mon 27th June			
14:00-14:05 (L 1.0)	Structure and purpose of the course.		Marie Reilly
14:05-14:45 (L 1.1)	Disease occurrence and risk; review of classical sampling designs.	CES 1.1-1.3	Marie Reilly
14:45-15:00 (Ex 1.1)	Exercise 1.1: Description of own work in terms of design and sampling scheme (inclusive, exclusive, concurrent).		Tutors
15:00-15:30 (L 1.2)	Sources of bias: sampling bias, response bias, measurement bias, data source bias (truncation, surveillance bias), time-related bias, confounding bias.	CES 1.4	Chuen Seng Tan
15:30-16:30 (L 1.3)	Review of epidemiological tables: Tests of association (relative risk [RR], odds ratio [OR]); Confounding, stratification; Tests of homogeneity and trend.	CES 2.1-2.2 CES 2.3-2.5	Marie Reilly
16:30-17:30 (Ex 1.2)	Exercise 1.2: Pencil & paper, openepi.com, Stata/R.		Tutors
Session 2 Wed 29th June			
14:00-14:45 (L 2.1)	From tables to logistic regression models: Prospective/retrospective data, interpreting parameters.	CES 2.5, 2.6 -2.6.5	Chuen Seng Tan
14:45-15:30 (Ex 2.1)	Exercise 2.1: Logistic regression.		Tutors
15:30-16:00 (L 2.2)	Role of matching in cohort and case-control studies; balance, overmatching.	CES 6.1, 6.2	Marie Reilly
16:00-16:15 (Ex 2.2)	Exercise 2.2 Examples of matching in own area/work: potential, use, overuse.		Tutors
16:15-16:45 (L 2.3)	Conditional logistic regression for matched data.	CES 2.6.6, 2.6.7	Marie Reilly
16:45-17:30 (Ex 2.3)	Exercise 2.3: Conditional logistic regression.		Tutors
Session 3 Fri 1st July			
14:00-14:45 (L 3.1)	Introducing time: relationship between inclusive, exclusive, concurrent sampling. Relationship between RR, OR and incidence rate ratio (IRR).	CES 4.1	Marie Reilly
14:45-15:00 (Ex 3.1)	Exercise 3.1: Illustration in Excel of RR, OR, IRR.		Tutors
15:00-16:00 (L 3.2)	Survival, hazard, hazard ratio (HR) from Cox regression.	CES 4.2, 4.3	Chuen Seng
16:00-16:30 (L 3.3)	Matching on time, HR from conditional logistic regression.	CES 4.4.1	Marie
16:30-17:30 (Ex 3.2)	Exercise 3.2: Cox regression and conditional logistic regression.		Tutors
Session 4 Mon 4th July			
14:00-14:45 (L 4.1)	Missing data, 2-stage studies, inverse probability weighting (IPW).	CES 3.1, 3.2.2	Marie Reilly
14:45-15:30 (Ex 4.1)	Exercise 4.1: Analysis of 2-stage data.		Tutors
15:30-16:00 (L 4.2)	Optimal sampling of 2-stage data.	CES 8.2	Marie Reilly
16:00-16:45 (L 4.3)	Two-stage designs for time-to-event data.	CES 4.5, 4.7, 8.3-8. 3.1	Paola Rebora
16:45-17:30 (Ex 4.2)	Exercise 4.2: Optimal/Efficient sampling.		Tutors

Session 5 Wed 6th July				
14:00-14:45	(L 5.1)	RR from case-control data by “doubling the cases”.	CES 5.2	Yilin Ning
14:45-15:30	(Ex 5.1)	Exercise 5.1: RR from doubling the cases.		Tutors
15:30-16:00	(L 5.2)	Breaking the time matching; reconstructing the study-base for nested case-control (NCC) designs.	CES 6.3	Marie Reilly
16:00-16:30	(L 5.3)	Weighted Cox regression of NCC data: applications.	CES 6.4, 6.5	Marie Reilly
16:30-17:30	(Ex 5.2)	Exercise 5.2: pencil and paper and computation of weights to reconstruct a cohort		Tutors
Session 6 Fri 8th July				
14:00-14:45	(L 6.1)	Extensions to NCC: case-cohort design	CES 4.5	Chuen Seng Tan
14:45-15:30	(L 6.2)	Exposure- enriched controls: counter-matching	CES 8.3.2	Marie Reilly
15:30-16:15	(L 6.3)	Other controlled designs: case crossover, case time-control, test-negative design, use of “negative controls”.	CES 10.1 10.2-10.3 (to come)	Marie Reilly
16:15-17:15	(L 6.4)	Interactive lecture: short presentations from participants of design or analysis plan for their own work		Marie Reilly
17:15-17:30		Wrap-up		Marie Reilly

*Excerpts from draft of text book “*Controlled Epidemiological Studies*”