

Course Materials (Fig.) and Newspaper Articles (EM)

Chapter Titles:	1. Empirical Problem Solving	7. Response Models	13. Confidence and Prediction Intervals
	2. Understanding the Problem	8. Least Squares	14. Tests of Significance
	3. Developing the Plan	9. Model Assessment	15. Comparative Investigations
	4. The Data, Analysis and Conclusion Stages	10. Causation and Experimental Plans	16. Simple Linear Regression
	5. Models for Sampling and Measuring	11. Causation and Observational Plans	17. Models for Binary Data
	6. Measuring System Case Study	12. Distributions of Estimators	18. Estimation for Binary Models

Chap-ter	Number	Date	Title	Topic(s)
1	Fig. 1.1	---	DATA-BASED INVESTIGATING: Introductory Overview	Chapter 1
	EM0138	Dec. 28	Encouraged to gamble their fortunes away	Data-based investigating
	EM9603	Jan. 03	Ontario to allow new incinerators	Data-based investigating
	EM9035	Nov. 10	Spine-chilling to look at: another stat	Data-based investigating
	EM9422	Dec. 31	Random violence skews crime perception	Data-based investigating
	EM9317	Feb. 25	Street drug use waning in Metro	Data-based investigating
	EM9401	Jan. 20	Quebecers fool around more than most	Data-based investigating
	EM9307	Jan. 21	Sex, statistics and wages	Data-based investigating
	EM9356	Nov. 19	Polling the polled	Data-based investigating
	EM9801	Apr. 04	What the numbers say	Data-based investigating
	EM9802	May 09	Death of Cod	Data-based investigating
	EM9357	Nov. 19	50% of women report assaults	Data-based investigating
	EM9514	May 06	The backlash on whiplash	Data-based investigating
	EM0019	May 26	Death on tap	Data-based investigating
	EM9607	Jan. 03	What ASA and vitamin C can do for you	Data-based investigating
	EM9513	Jan. 03	Hummingbird research has implications well beyond the nest	Data-based investigating
	Fig. 1.2	---	DATA-BASED INVESTIGATING: Accuracy of Information 1	Chapter 1
	Fig. 1.3	---	DATA-BASED INVESTIGATING: Accuracy of Information 2	Chapter 1
	Fig. 1.4	---	DATA-BASED INVESTIGATING: Racial Differences in IQ	Chapter 1
	Fig. 1.5	---	STAT 231 GLOSSARY (including statistical distinctions and notation)	Terminology definitions
2	EM0419	May	Tuition Hikes Driving Up Debt	Attributes
	EM9414	Oct. 07	Study debunks image, finds sex partners faithful	Attributes
	EM0136	Dec. 21	Heroic self-sacrifice cut death toll at WTC	Graphical attribute
	EM0304	Oct. 04	Fee hikes not forcing students away	Graphical attribute
	EM0137	Dec. 28	Stress in pregnancy hikes risk of autism, U.S. research finds	Causative aspect
	EM0201	Jan. 04	Study advocates seat belts for rear-seat passengers	Causative aspect
	EM0443	Jan. 10	Mother's stress, depression affects unborn child, researchers say	Causative aspect
	EM0130	Sep. 05	Improving lives of black youth will stop violence, group says	Causation
	EM0203	Jan. 07	Most fear air quality, poll says	Causation
	EM0129	Sep. 05	Africans harden stand on reparations	Causation
	EM9529	July 01	Truth, lies and disputes about accuracy	Terminology
	EM0301	Jan. 18	The scribe who came in from thinking clearly	Terminology
3	Fig. 3.1	---	DATA-BASED INVESTIGATING: Study Error	Study error
	Fig. 3.2	---	DATA-BASED INVESTIGATING: Limitations Imposed by Study Error	Study error
	Fig. 3.3	---	THE PPDAC CYCLE: Conducting Client Surveys	Plan stage
	Fig. 3.4	---	THE PPDAC CYCLE: How Polls Are Conducted	Plan stage
	EM9331	Sep. 09	The extent of sexual violence in women's lives	Plan stage
	EM0442	Nov. 23	Hooked on your cell? You must be Canadian	Plan stage
	Fig. 3.5	---	SAMPLING: Limitations Imposed by Sample Error -- Two Illustrations	Sample error
	Fig. 3.6	---	MEASURING: An Introduction	Measuring
	Fig. 3.7	---	MEASURING: Investigating Paper Thickness	Measurement error
	Fig. 3.8	---	MEASURING: Results from Paper Thickness Investigating	Measurement error
	Fig. 3.9	---	SURVEY DESIGN AND PRACTICE: An Introduction to Non-Response	Non-response error
	Fig. 3.10	---	SURVEY DESIGN AND PRACTICE: <i>The Literary Digest</i> Poll	Error
4	EM9328	Aug. 04	The war over 'who is poor'	Measuring
	EM0302	May 27	New yardstick places more people in poverty	Measuring
	EM0422	June	Measuring university participation	Measuring
	EM9527	June 28	Teens smoke more, study finds	Measuring
	EM9408	July 16	Plant life used to monitor pollution	Measuring
	EM9353	Nov. 02	Myth of poor worker training attacked	Measuring
	EM9411	Sep. 16	The attack on red wine's hearty reputation	Measuring
	EM8001	Mar. 29	Poorly phrased census questions costly	Measuring

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4	EM9015	Feb. 06	Perhaps if you rephrased the question	Measuring
	EM9358	Nov. 19	Violence survey takes toll on staff	Measuring
	EM9601	Jan. 01	Dubious Data awards highlight statistical follies	Data stage
	Fig. 4.1	---	ANALYSIS STAGE: Stemplots	Chapter 4
	Fig. 4.2	---	ANALYSIS STAGE: Histograms 1	Chapter 4
	Fig. 4.3	---	ANALYSIS STAGE: Histograms 2	Chapter 4
	Fig. 4.4	---	ANALYSIS STAGE: Scatter Diagrams	Chapter 4
	Fig. 4.5	---	ANALYSIS STAGE: Correlation	Chapter 4
	Fig. 4.6	---	ANALYSIS STAGE: Other Graphical Methods 1	Chapter 4
	Fig. 4.7	---	ANALYSIS STAGE: Other Graphical Methods 2	Chapter 4
	Fig. 4.8	---	ANALYSIS STAGE: Other Graphical Methods 3	Chapter 4
	EM9503	Mar. 31	Tobacco, fatty beef targets of report	Conclusion stage
	EM9512	Apr. 21	Mariners big fish in Vancouver	Conclusion stage
	EM9519	June 02	Rising deaths among infants stun scientists	Conclusion stage
	EM0221	Mar. 22	Falling fertility rates means fewer workers	Conclusion stage
	EM9620	Feb. 23	Health report queried	Conclusion stage
	EM9336	Sep. 20	University lectures: They don't work	Conclusion stage
	EM9525	June 23	Low consumer confidence brings housing starts down	Conclusion stage
	EM9605	Jan. 03	Cities post stable homicide rates	Conclusion stage
	EM9617	Feb. 14	Lung cancer found most lethal tumour	Conclusion stage
5	Fig. 5.1	---	PROBABILITY MODELS: Selected Areas Under the Gaussian Pd.f.	Chapter 5
	Fig. 5.2	---	PROBABILITY MODELS: Finding Gaussian Probabilities	Chapter 5
	Fig. 5.3	---	CONTINUOUS RANDOM VARIABLES: Six Characteristics	Chapter 5
	Fig. 5.4	---	PROBABILITY MODELLING: Linear Combinations of Random Variables	Chapter 5
	Fig. 5.5	---	PROBABILITY MODELLING: The Central Limit Theorem Approximation	Chapter 5
	Fig. 5.6	---	DATA-BASED INVESTIGATING: Modelling ... Shape of Data Distributions	Chapter 5
	Fig. 5.7	---	DATA-BASED INVESTIGATING: Error – Its Categories and Sources	Error in Statistics
	Fig. 5.8	---	DATA-BASED INVESTIGATING: Modelling Sample ... Measurement Error	Chapter 5
	Fig. 5.9	---	RESPONSE MODELS: Definitions of Symbols	Chapter 5
6	EM0303	May 27	Shrinking kilogram sows mass confusion in labs	Calibrating
	EM8702	Apr. 25	Maple Leaf coin healthy, not underweight	Measuring
	EM9520	June 10	Forget standard deviation – New ways to measure risk	Measuring
	EM0210	Feb. 16	New scoring system would have iced the gold for the Canadians	Measuring processes
	EM8820	Oct. 11	English profs surprised by computer's verdict	Measuring
	EM9522	June 16	Professor of year can't get job	Measuring
	Fig. 6.1	---	MEASURING: Investigating Coin Weights	Chapter 6
	Fig. 6.2	---	MEASURING: Results from Coin Weight Investigating	Chapter 6
	Fig. 6.3	---	MEASURING: Inaccuracy – a Major Consideration	Chapter 6
	Fig. 6.4	---	MEASURING: Three Examples from Physics	Chapter 6
	Fig. 6.5	---	MEASURING: Dating the Shroud of Turin	Chapter 6
	Fig. 6.6	---	MEASURING: Assessing Student Performance	Chapter 6
	Fig. 6.7	---	MEASURING: Are we too obsessed with real GDP?	Chapter 6
	Fig. 7.1	---	RESPONSE MODELS	Chapter 7
7	EM9001	Jan. 03	Breast is best	Causative aspect, unblocked Plan
	EM9342	Oct. 22	Cream found effective in reducing fat	Causative aspect, blocked Plan
	EM9701	Jan. 03	Enrolment and test scores	Straight-line relationships
	EM9920	June 09	Skin-cancer rate levels off as Canadians cover up	Straight-line relationships
	EM9201	Jan. 02	Will women soon outrun men?	Straight-line relationships
	Fig. 8.1	---	RESPONSE MODELS: Least Squares Estimating of Parameters	Chapter 8
8	EM0205	Jan. 23	High Court to Weigh Census Estimates	Estimating
	EM0231	Apr. 11	Graham won't make summit estimate	Estimating
	EM0232	Apr. 11	Kyoto impact estimates vary widely	Estimating
	Fig. 8.1	---	RESPONSE MODELS: Least Squares Estimating of Parameters	Chapter 8
10	EM0204	Jan. 21	Head injuries linked to brain disease	Experimental Plans
	EM0207	Feb. 09	Canadians working on method to heal heart	Experimental Plans
	EM9604	Jan. 03	Study shows a cause of retardation	Experimental Plans
	EM9630	Dec. 05	Effect of social drinking on estrogen therapy queried	Experimental Plans
	EM0307	Oct. 17	Microwaving destroys nutrients, study finds	Experimental Plans
	EM0311	Dec. 11	Leading vitamin scientist faces fire over data	Experimental Plans
	EM9404	May 18	Allergy drugs linked to tumour growth	Experimental Plans
	EM9703	July 03	A daily dose of garlic helps keep your ticker ticking	Experimental Plans

Course Materials (Fig.) and Newspaper Articles (EM) (continued)

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10	EM9402	Apr. 12	Study finds broccoli could block cancers	Experimental Plans
	EM9315	Feb. 18	Extra calcium keeps older women's bones strong, study finds	Experimental Plans
	EM9303	Jan. 16	Studies show TV violence begets real violence	Experimental Plans
	EM9308	Jan. 22	Parkinson's drug found to ease early symptoms	Experimental Plans
	EM9319a	Mar. 04	Get cracking on walnut diet to cut cholesterol, study says	Experimental Plans
	EM9319b	Mar. 04	Eating nuts helps heart, U.S. researchers report	Experimental Plans
	EM9321	Mar. 11	Prostate drug helps some avoid prostate surgery	Experimental Plans
	EM9322	Mar. 11	Fat substitutes backfire, researchers say	Experimental Plans
	EM9339	Oct. 15	Mozart's piano music the key to higher IQ?	Experimental Plans
	EM9704	July 02	ASA helps heart but hurts brain	Experimental Plans
	EM9606	Jan. 03	Anticholesterol drugs risky for some	Experimental Plans
	Fig. 10.1	---	EXPERIMENTAL PLANS: An Example from Breast Cancer Research	Chapter 10
	Fig. 10.2	---	EXPERIMENTAL PLANS: An Example from Heart Disease Research	Chapter 10
	Fig. 10.3	---	EXPERIMENTAL PLANS: Oat Bran and Serum Cholesterol Levels	Chapter 10
	Fig. 10.4	---	EXPERIMENTAL PLANS: Cigarette Advertising and ... Consumption	Chapter 10
	Fig. 10.5	---	EXPERIMENTAL PLANS: Meta-Analysis of Aspirin Data	Chapter 10
	Fig. 10.6	---	CAUSATION: An Introduction	Chapter 10
	Fig. 10.7	---	ASSOCIATION AND CAUSATION IN STATISTICS: Reality and Illusion	Confounding
	Fig. 10.8	---	DATA-BASED INVESTIGATING: Question Aspect and Method ... Selecting	Chapter 10
	EM0310	Oct. 28	'It's a girl!' So what?	Confounding
	EM0424	Aug. 06	Death rate higher near busy roads	Confounding
11	EM0209	Feb. 15	Sleep less, live longer, scientists say in new study	Observational Plans
	EM9361	Dec. 01	Fats raise risk of lung cancer in non-smokers	Observational Plans
	EM9403	Apr. 15	Stressful jobs raise men's blood pressure	Observational Plans
	EM9405	June 25	Vegetarians less likely to die of cancer	Observational Plans
	EM9406	July 01	Inuit shorter, snowmobiles blamed	Observational Plans
	EM9410	Aug. 13	Criminality, poor prenatal care linked	Observational Plans
	EM9413	Sep. 21	Exercise may reduce breast cancer risks	Observational Plans
	EM9420	Dec. 01	Breast milk best for infant brain development	Observational Plans
	EM9618	Feb. 16	Breastfeeding, cancer link not found in study	Observational Plans
	EM0223	Mar. 22	Down syndrome cuts cancer risk	Observational Plans
	EM0421	June 12	Mercury exposure linked to high rate of hospitalization for cerebral palsy	Observational Plans
	EM9312	Feb. 15	Studies link vasectomy with prostate cancer	Observational Plans
	EM9302	Jan. 15	Fertility drugs may be linked to ovarian cancer	Observational Plans
	EM9304	Jan. 16	Inhaled hormones cut asthma risk, study concludes	Observational Plans
	EM9306	Jan. 21	Smoking inhibits cancer therapy: study	Observational Plans
	EM9314	Feb. 15	Do lefties live as long as righties? Debate rages on	Observational Plans
	EM9318	Feb. 28	Sweat off chance of getting diabetes	Observational Plans
	EM9320	Mar. 10	Vitamin use can prevent birth defects, MDs find	Observational Plans
	EM9338	Oct. 07	Gun in home triples murder risk	Observational Plans
	EM9355	Nov. 03	Neighbours perplexed by study	Observational Plans
	EM9407	July 16	Fat boys and short girls	Observational Plans
	EM9415	Oct. 07	Major study conforms moderate drinking helps you live longer	Observational Plans
	EM9417	Oct. 22	Poor AIDS victims die sooner than wealthy ones, study says	Observational Plans
	EM9602	Jan. 02	Estrogen therapy cuts health risks, study finds	Observational Plans
	EM9610	Jan. 18	Unanswered questions on race and crime	Observational Plans
	EM0208	Feb. 12	Better off red?	Observational Plans
	EM0020	May 31	Health Canada saw danger to district	Association and causation
	Fig. 11.1	---	OBSERVATIONAL PLANS: Conclusions Involving Causation 1	Chapter 11
	Fig. 11.2	---	OBSERVATIONAL PLANS: Conclusions Involving Causation 2	Chapter 11
	Fig. 11.3	---	OBSERVATIONAL PLANS: Conclusions Involving Causation 3	Chapter 11
	Fig. 11.4	---	OBSERVATIONAL PLANS: Health Consequences of ... Smoking	Chapter 11
	Fig. 11.5	---	OBSERVATIONAL PLANS: Physical Activity and Health	Chapter 11

Chapter	Number	Date	Title	Topic(s)
11	Fig. 11.6 Fig. 11.7	--- ---	OBSERVATIONAL PLANS: Simpson's Paradox 'CONFOUNDING': Usage in Statistics	Chapter 11 Confounding
13	Fig. 13.1 EM9305 EM9310 EM9313 EM9311 EM9309 EM9619	--- Jan. 18 Feb. 02 Feb. 15 Feb. 06 Jan. 26 Feb. 16	QUANTIFYING UNCERTAINTY: Confidence Intervals 71% approve welfare probes Most wary of recovery, poll suggests 64% of Canadians want own business, poll says Most support gay rights, poll says MDs refuse to report suspected misconduct Study backs up illogical notion	Chapter 13 Confidence intervals Confidence intervals Confidence intervals Confidence intervals Confidence intervals Confidence intervals
14	Fig. 14.1 EM9609 EM0222 EM0202 EM9418	--- Jan. 05 Mar. 22 Jan. 05 Oct. 27	TESTS OF SIGNIFICANCE: Investigating Extrasensory Perception January Effect a mixed bag Was TV star's disease born of B.C. virus? Drawing the line on drinking and driving Study links abortion, breast cancer risk	Chapter 14 Significant relationships Significant relationships Cut-off levels Practical importance
15	EM9614 EM0212 Fig. 15.1	Feb. 05 Feb. 20 ---	Beta carotene found ineffective against disease Bone-drug study finds heart benefit COMPARATIVE INVESTIGATING: Aluminum in Drinking Water	Comparative investigating Comparative investigating Chapter 15
16	Fig. 16.1 Fig. 16.2 Fig. 16.3 Fig. 16.4 Fig. 16.5	--- --- --- --- ---	SIMPLE LINEAR REGRESSION: Background for Regression Modelling SIMPLE LINEAR REGRESSION: Illustration 1 SIMPLE LINEAR REGRESSION: Illustration 2 SIMPLE LINEAR REGRESSION: Illustration 3 SIMPLE LINEAR REGRESSION: Anscombe's Four ... Data Sets	Chapter 16 Chapter 16 Chapter 16 Chapter 16 Chapter 16
17	EM9316 EM9409 EM0220	Feb. 20 July 19 Mar. 08	Many farm wells contaminated, new study confirms 42% of Ontario trucks found unfit in spot check Nearly a third of people over 80 too impaired to drive, inquest told	Estimating a proportion Estimating a proportion Estimating a proportion
App. B	--- --- --- --- ---	--- --- --- --- ---	Tables 1, 2. PROBABILITIES FOR THE ... DISTRIBUTION $[G(0,1)]$ Table 3. PERCENTILES FOR THE t DISTRIBUTION $[t_v]$ Table 4. PERCENTILES FOR THE K DISTRIBUTION $[K_v]$ Table 5. PERCENTILES FOR THE χ^2 DISTRIBUTION $[\chi^2_v]$ Table 6. 3,000 EQUIPROBABLE DIGITS	Statistical tables Statistical tables Statistical tables Statistical tables Statistical tables