Three-course data analytics series at CCAC's North Campus

1. DAT-102: Introduction to Data Analytics
2. DAT-201: Data Analytics 1
3. DAT-202: Data Analytics 2

Course concept progression

The following table maps course session dates, lesson topics, references, and content links for all three Data Analytics courses in the series.

course	date	wk no.	session links	learning objectives	out-of-class work
DAT-102	MON 9-SEP-19	1	**Introduction to data analytics** Course syllabus Week 1 Station Guide	TR.102.DS.3.A - Decompose the data analytics field TR.102.DS.1.A - Data Tables - Creating: **`Create a data table with logically assigned types for each column and a unique identifier for each row`**	
DAT-102	MON 16-SEP-19	2	Data structures stations Data structures station worksheet	Broadly Classify data analytic artifacts/products/displays (Quant/qual/categorical/textual) TR.102.DS.3.C - Continuous & categorical variables TR.102.DS.3.D - Data structures (list, set, stream, table, graph, tree) TR.102.DS.3.E - Analytic modes: describing, modeling, predicting TR.102.DS.1.B - Data Tables - Converting: **`Export and import data tables in .xslx, .ods, .csv formats`**	
DAT-102	MON 23-SEP-19	3	Strip surveys from FA18 Quant variable profile Editable Quant variable profile PDF Online box plot image creator Sample strip survey analysis		1

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DAT-102	MON 30-SEP-19	4	**KISS: Non-summary descriptive statistics** **Phase 0:** Ida's whiskers Ida Mae Darsow Interest Inventory Results Non-summary statistics **Phase 1:** (full group): IQR, Box plots, and outliers **Phase 2:** (full group): Scaled scores and percentiles Exploration activities: 1. 1: Ida's Whiskers 2. 2: Measuring measurement error 3. 3: Slicer-segemented blox plot wall strip 4. 4: Displaying categorical data 5. 5: Frequency distribution (Historgram) interpretation 6. 6: Data range and scale categorization **Phase 4:** (full group): Making sense of a wall of data: figure translations & the high bar of generalization **instructor post-session notes**	**Data.quant.1.A:** Generate box and whisker plots for categorical and non-categorical data	Inquiry cycle on the MN trees

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DAT-102	MON 7-OCT-19	5	**Summary-based descriptive stats: mean and standard deviation** Distributions playground spreadsheet Edgewood and swissvale comparison Frequency master challenge key Distributions and variance (under const) Quant profile V.1.0 **Phase 1:** Spreadsheet play-along: center and spread computation and manipulation **Phase 3:** Trade-offs and conflicting priorities group exercise **Phase 4:** Debrief and discussion of normality assumptions in statistical inference		Complete activities 1A - 1K in Chapter 1 of Statistics Notes handout Summarizing Data: Ch 1: KEY (PDF)
DAT-102	MON 14-OCT-19	6	**Census vs. sampling: estimates and margins of errors** American factfinder home American Community Survey Error Rates Explained	TR.102.DS.6.A - Surveys - Designing: TR.102.DS.6.B - Surveys - Sampling & Administering: TR.102.DS.6.C - Surveys - Analyzing:	
DAT-102	MON 21-OCT-19	7	**Univariate and multi-variate experiments** The Normal distribution StatKey online data cruncher	d	Exploring the Opportunity Atlas

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DAT-102	MON 28-OCT-19	8	**Opportunity Atlas mini-project: multi-type data policy inquiry** Data-based program evaluation		
DAT-102	MON 4-NOV-19	9	**Population proportions** StatKey online data cruncher Estimating population proportions		1
DAT-102	MON 11-NOV-19	10	**Interpreting p-values through experimentation** Experimental design		1
DAT-102	MON 18-NOV-19	11	**Data gathering 2: Human subject experiments**	TR.102.DS.7.A - Experiments - Designing: TR.102.DS.7.B - Experiments - Treatment assignment & Implementing: TR.102.DS.7.C - Experiments - Analyzing: TR.102.Q.10 - Standard errors TR.102.Q.11 - Student's T-tests - Setup TR.102.Q.12 - Student's T-tests - Interpretation	1
	MON 25-NOV-19	-	TURKEY BREAK!		
DAT-102	MON 2-DEC-19	12	**Sampling (final) project practice and design** Course planning survey DAT-102 Final project specs	1	1

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DAT-102	MON 9-DEC-19	13	**Visualization best practices** **Final project concept development**	1	1
DAT-102	MON 16-DEC-19	14	**Final project worktime**		
DAT-102	MON 16-DEC-19	14	**FINAL EXAM PERIOD from 6:00 - 8:00 pm**		

Data 201: Data Analytics 1

course	date	wk no.	session links	learning objectives	out-of-class work
DAT-201	TUE 03-SEP-19	1	**Session outline:** 1. Welcome and introductions 2. Project-based learning in action: Review of past term projects: project repository and student response sheet 3. Syllabus review 4. Pivot table glory: Past example 5. Pivot table glory: Your turn! Grade comparison. Session guide:VLookup() and Pivot tables review Shared drive of grade analyses	SPDSHT1: **Implement VLOOKUP formulas in spreadsheets** SPDSHT2: **Fomulate a spreadsheet to properly get slurped up by a pivot table** SPDSHT3: **Create a pivot table to answer inquiry questions by configuring row and column selections**	