

List of skills for elective courses:

Course 11: Modeling tools for predictive analytics

modeling, predictive analytics, statistical analysis, machine learning, exploratory data analysis, Excel, business

Course 12: Experimental Design for Data Science

experimental design, planning, research, qualitative analysis, quantitative analysis

Course 13: Storytelling with data (Tableau)

Tableau, storytelling, delivery, visualization, robust visualization

Course 14: Research data and research operations

research, data management, data storage, security of data, decision making

Course 15: Forecasting and Time series application

predictive analytics, time series analytics, machine learning, ARIMA model, stationarity, cyclicity, seasonality, autocorrelation

Course 16: Cloud technology in data science

cloud technology, cloud computing, cloud architecture, big data, security of data, IaaS, PaaS, SaaS, risk management

Course 17: R for data science

R, business, big data, statistical analysis, benchmarking, profiling, ggplot, tidyverse

Course 18: Optimization Techniques

optimization, linear optimization, non-linear optimization, theory-based mathematics, convexity, duality, sensitivity analysis, simplex method, Newton's method, gradient-based method, stochastic gradient descent

Course 19: Stochastic Modeling

stochastic modeling, optimization, two-stage stochastic programming, Bender's method, SAA, Monte Carlo, static robust optimization, two-stage robust optimization, Markov chain, queuing theory, renewal process

Course 20: Reinforcement Learning

reinforcement learning, dynamic programming, Monte Carlo, temporal-difference, behavioral cloning, inverse reinforcement learning, meta-learning, multi-agent learning

Course 21: Human values in data science

ethics, reading, writing, policy, privacy, discrimination

Course 22: Information values and ethics

ethics, reading, writing, policy, privacy, discrimination

Course 23: Business immersion

business, organizational management, planning, personal branding, writing, presentation

Course 24: Analytics in management

Course 25: Supply chain management

business, supply chain management, supply chain analytics, capacity management, six sigma, VUCA, deterministic model, stochastic model, transportation, contract design

Course 26: Data Driven investments

business, investment, predictive analytics, bonds, theory of interest, IRR, portfolio management, portfolio modeling, linear programming, dynamic programming, integer programming, risk management

Course 27: Simulation and risk analysis

statistical analysis, risk management, time series analytics, cyber security, discrete event simulation, optimization, Monte Carlo, Markov chain, Excel, SIMUL8

Course 28: Analytics for marketing strategy

business, marketing, factor analysis, cluster analysis, classification analysis, multi-variate regression analysis, deep learning, web scraping, R, ME>XL

<https://www.coursera.org/learn/predictive-modeling-analytics>

<https://ischool.utoronto.ca/course/experimental-design-for-data-science/>

[https://continuingstudies.mcgill.ca/search/publicCourseSearchDetails.do?method=load&courseId=6666007&mc_cid=f9d9f6e8f4&mc_eid=\[UNIQID\]](https://continuingstudies.mcgill.ca/search/publicCourseSearchDetails.do?method=load&courseId=6666007&mc_cid=f9d9f6e8f4&mc_eid=[UNIQID])

<https://www.coursera.org/learn/data-management>

<https://www.rotman.utoronto.ca/Degrees/PhD/Academics/MajorAreasofStudy/OperationsManagementandStatistics>

<https://www.coursera.org/lecture/demand-prediction-using-time-series/arima-models-7UQJG>

https://learn.utoronto.ca/programs-courses/certificates/cloud-computing?gclid=CjwKCAjwiuuRBhBvEiwAFXKaNH98EKPXzCB9buvUv85y7J5MAGlz3QJIAHxExFTmDfgkApWIBBUL7hoCSIEQAvD_BwE

<https://www.datacamp.com/courses/free-introduction-to-r>

https://www.datacamp.com/tracks/r-programming?irclickid=wD4U0tyCNxyITb2w14VOxwykUkGQ3SR3U6gT80&irgwc=1&utm_medium=affiliate&utm_source=impact&utm_campaign=357605&

<https://online.stanford.edu/courses/mse221-stochastic-modeling>

https://cse.buffalo.edu/~avereshc/rl_spring20/Reinforcement_Learning_Course_Syllabus_2020_Update_d.pdf

<https://www.ischool.berkeley.edu/courses/datasci/231>

<https://www.ischool.berkeley.edu/courses/datasci/231>

<http://blogs.ubc.ca/comm120businessimmersion/files/2015/08/COMM-120-Course-Outline-Jan-2016-FINAL-updated-30Mar2016.pdf>

https://cisl-onlinecourses.getsmarter.com/presentations/lp/university-of-cambridge-sustainable-supply-chain-management-online-short-course/?ef_id=c:433334258859_d:c_n:g_ti:kwd-391954643477_p:k:%2Bsupply%20%2Bchain%20%2Bmanager%20%2Bcourse_m:b_a:82241924091&gclid=CjwKCAjwiuuRBhBvEiwAFXKaNOJtUILLW2rw64ur-cSCna9Sz2E251jQZJEb-qb9L9JlAK1AQ1VGaMRoCGkoQAvD_BwE&gclsrc=aw.ds

<https://gradstudies.engineering.utoronto.ca/files/2020/05/APS1017-Course-Outline.pdf>

https://learn.utoronto.ca/programs-courses/courses/2121-principles-operations-supply-chain-management?gclid=CjwKCAjwiuuRBhBvEiwAFXKaNOzSsKRb8jXeRtmLhCddIdCQ1bj722hlcaXIGbDCWophyLUGEFb-EhoCi70QAvD_BwE

<https://www.ivey.uwo.ca/mma/courses/simulation-and-risk-analysis/>

<https://online.stanford.edu/courses/cee242r-project-risk-analysis>

<https://ug.degroote.mcmaster.ca/files/2020/07/4MI3-Marketing-Analytics-Course-Outline-Fall-2020.pdf>

<https://mbastudent.degroote.mcmaster.ca/wp-content/uploads/sites/69/2021/10/M733-Marketing-Analytics-Winter-2020-BLENDED-syllabus-18dec19.pdf>