

ONLINE GRADUATE DATA SCIENCE COURSES SUMMER 2019 • ENROLL NOW

JUMPSTART YOUR TRAINING IN DATA SCIENCES
ACCELERATE YOUR RESEARCH IN BIG DATA

SUMMER 2019 ONLINE COURSES

In the increasingly data-rich and data-driven world, graduate students need to know how to make decisions grounded in data science foundations. The College of Science has developed a set of 1-credit courses to provide needed background in computational methods, statistical techniques, data modeling, and data management techniques. The Department of Philosophy contributes an Ethics course. Completion of these courses will help prepare students to pursue additional graduate data science courses. Subsets of these courses will enhance the research within their own domain.

JUNE 3 - JULY 5, 2019

Data Engineering I (CS 59000DEI)

Basic data manipulation; review of Python; introduction to Unix scripts; data cleaning; dealing with missing data; summarizing data

Foundations of CS (CS 59000FCS)

Basic logic and proof methods; recursion and induction; intro to data structures; sorting, searching, graph algorithms; algorithm design & analysis

Probability & Statistics (STAT 59800PS)

Intro to probability & statistics; random variables and distributions; exploratory data analysis & statistical inferences; R

Linear Algebra for DS (MA 59800)

Fundamentals of linear algebra for data science and applications; matrix operations; diagonalization and decomposition; vector spaces; eigen values

JULY 8 - AUG 9, 2019

Data Engineering II (CS 59000DEII)

Relational databases; SQL; intro to No-SQL systems; intro to cloud computing; indexing; access control

Foundations of Decision Making (CS 59000FDM)

Sampling and reproducibility; hypothesis testing (A/B testing), multiple hypothesis testing, data visualization, fairness, and data biases

Numerical Computing for DS (CS 59000NCDS)

Numerical modeling of data, applications & methods of linear systems & eigenvalues on networks, massive matrix methods for data analysis; numerical optimization

Ethics for Data Science (PHIL 29300DL)

Understanding of ethical questions & responsibilities; identifying & isolating ethical problems/issues likely to arise in data science



For a list of the expected background knowledge and more information visit:
www.science.purdue.edu/data-science/academics/online-modules.html

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