

DS ELECTIVE REQUIREMENTS

1. Choose either Methodology track
OR In-the-Field track

2. Complete **ONE** course from
EACH of its subjects

3. Complete **EXTRA** course from
ANY of its subjects

METHODOLOGY

Advanced Data Science Methods ☐ ☐		Scalable and Trustworthy DS & AI ☐ ☐		Applied and Use-Inspired DS & AI ☐ ☐	
CAS CS 507	Optimization in Computing and Machine Learning	CDS DS 563	Algorithmic techniques for Taming Big Data	CAS CS 440	Intro. to Artificial Intelligence
CAS CS 530	Advanced Algorithms	CAS CS 528	Cloud Computing	CAS CS 505	Intro. to Natural Language Processing
CAS CS 531	Advanced Optimization Algorithms	CAS CS 561	Data Systems Architectures	ENG EC 523	Deep Learning
CAS CS 565	Algorithmic Data Mining	CAS CS 562	Advanced Database Applications	CAS MA 415	Data Science in R
ENG EC 524	Optimization Theory and Methods	ENG EC 521	Cybersecurity		
ENG EC 533	Advanced Discrete Mathematics	ENG EC 528	Cloud Computing		
CAS MA 416	Analysis of Variance				
CAS MA 539	Methods of Scientific Computing				
CAS MA 584	Multivariate Statistical Analysis				
CAS MA 589	Computational Statistics				

IN-THE-FIELD

Analytics in the Field ☐ ☐		Algorithmics in the Field ☐ ☐		Data Science in the Field ☐ ☐	
CDS DS 549	 Machine Learning X-Lab Practicum	CDS DS 519	 Software Engineering X-Lab Practicum	CDS DS 537	Data Science for Conservation Decisions
CAS EC 508	Econometrics	CAS CS 506	Computational Tools for Data Science	CDS DS 539	 Data Science Practicum
CAS EE 375	Intro. to Quantitative Environmental Modeling	CAS MA 569	Optimization Methods of Operational Research	CAS BI 577	Quantitative Approaches in Molecular Biology
CAS EE 516	Multivariate Analysis for Geographers	ENG EC 527	High Performance Programming w/ Multicore and GPUs	CAS EC 507	Statistics for Econometrics
CAS MA 415	Data Science in R	ENG BE 562	Computational Biology: Genomes, Networks, Evolution	CAS PO 399	Data Science for Politics
CAS MA 539	Methods of Scientific Computing	HUB XC 475	 Fellowship	CAS PO 599	
QST QM 222	Modeling Business Decisions and Market Outcomes	QST BA 476	Machine Learning for Business Analytics	QST BA 305	Business Decision-Modeling with Data
QST FE 459	Computational Techniques for Finance	QST BA 472	Business Experiments and Causal Methods		

** Maximum of two courses may be used toward major and minor requirements

Minimum Courses Required: 4

No DS 100? No problem! Complete additional 4 credits of CDS DS