

B.S. Environmental Data Science – Global Change Science

This is not an official list of degree requirements. Adjustments may be required due to curriculum changes.

First Year

Fall

Course	Prerequisite	Credit
FW1050 – Natural Resource Professional (Essential Ed: Seminar)		2
FW2051 – Field Techniques		2
BL1400 – Principles of Biology		3
BL1410 – Principles of Biology lab		1
CS1121 – Intro to Programming I	MA1031 (C) or higher	3
DATA1100 – Practical Data Science Tools		1
UN1015 – Composition (<i>Essential Education</i>)		3
Total		15

Spring

Course	Prerequisite	Credit
CH1150 – University Chemistry I	MA1031 (C) or higher or Placement	3
CH1151 – University Chemistry I lab	CH1150 (C)	1
CS1122 – Intro to Programming II	CS1121	3
DATA1200 – Data Science w/ Python	MA1030 (C) or higher	3
MA1135 – Calculus for Life Sciences	Placement	4
<i>Essential Education: Foundations in the Human World</i>		3
Total		17

Second Year

Fall

Course	Prerequisite	Credit
FW2060 – Environmental Sustainability		3
FW3020 – Forest Ecology	FW2010 (C), FW2051 (C)	3
CS2311 – Discrete Structures	CS1121 and MA1135	3
MA2720 – Statistical Methods	MA1030 or higher or placement	4
<i>Essential Education: SHAPE</i>		3
<i>Essential Education: Activities</i>		1
Total		17

Spring

Course	Prerequisite	Credit
FW3200 – Biometrics & Data Analysis	MA2720	4
FW3540 – Intro to GIS	FW2051 & MA2720	4
CS2321 – Data Structures	CS1122	3
MA2330 – Intro to Linear Algebra	MA1135	3
<i>Essential Education: Arts & Culture</i>		3
Total		17

Third Year

Fall

Course	Prerequisite	Credit
CS3425 – Intro to Database Systems	CS2321	3
DATA2201 – Foundations of Data Science	DATA1200 & CS1122 & MA2330	3
Global Change Science Directed Elective		3
Ethics Directed Elective		3
<i>Essential Education: Intercultural Competency</i>		3
Total		15

Spring

Course	Prerequisite	Credit
FW4370 – Forest & Landscape Hydrology		3
FW4421 – Climate Change & Forests		3
<i>Essential Education: Communication Intensive</i>		3
<i>Essential Education: Experience</i>		3
<i>Essential Education: Activities</i>		1
Total		13

Fourth Year

Fall

Course	Prerequisite	Credit
FW4800 – Communications for Natural Resources		2
Global Change Science Directed Elective		3-4
Global Change Science Directed Elective		3
<i>Essential Education: Activities</i>		1
Free Elective		3-4

Course	Prerequisite	Credit
Total		12-14

Spring

Course	Prerequisite	Credit
FW4380 – Landscape Ecology	MA2720	3
FW4500 – Env. Data Sci. Capstone		3
Global Change Science Elective		3
Database Elective		3
Free Elective (if needed)		0-2

Course	Prerequisite	Credit
Total		12-14

Grand Total = 120 Credits

Global Change Science Electives (choose one from each set)		
Course #	Course Title & Credits	Semester / Prereqs
FW3110 <i>or</i> SS4313	Natural Resource Policy (3) <i>or</i> Sustainability Science (3)	Spring <i>or</i> Fall
FW3330 <i>or</i> FW4300	Soil Science (4) <i>or</i> Wildland Fire (3)	Fall / CH1150 & CH1151 <i>or</i> Spring / FW3020
FW4710 <i>or</i> GE2640	Environmental Biogeochemistry (3) <i>or</i> Atmospheric Observations & Meteorology (3)	Fall / CH1150 <i>or</i> Fall-even yrs

Database Electives (choose one)		
Course #	Course Title & Credits	Semester / Prereqs
CS4801	Foundations of Machine Learning (3)	Fall / DATA2201 & MA2720
CS4811	Artificial Intelligence (3)	Fall, Spring / CS2311 & CS2321 & CS3425 & MA3720
CS4821	Data Mining (3)	Spring / CS3425 & MA2330 & MA2720

Ethics Electives (choose one)		
Course #	Course Title & Credits	Semester / Prereqs
CS3000	Ethical & Social Aspects of Computing (3)	Fall, Spring / CS3141
FW4180	Applied Environmental Ethics (3)	Fall
SAT1700	Cyber Ethics (3)	Fall