BACHELOR OF SCIENCE IN ENVIRONMENTAL CHEMISTRY

Environmental chemistry is a study of chemical principles and methodologies applicable to environmental phenomena and issues. The objective of this chemistry-focused environmental science program is to provide students with a rigorous education in traditional chemistry areas and a structured and interdisciplinary training crossing chemistry and environmental science. The program will provide students with a fundamental understanding of current environmental issues such as pollution of air and water, waste and recycling, and climate change, as well as a solid background in environmental chemical and instrumental analysis. Majors will gain the technical skills to work in atmospheric science, hydrologic science, environmental science, environmental analytical chemistry, environmental toxicology, and environmental health science.

Required Courses

Code	Title		Credit Hours
Environmental Chemistry Requirements			**(51)**
CHEM 100	Introduction to the Profession		2
CHEM 124	Principles of Chemistry I with Laboratory		4
CHEM 125	Principles of Chemistry II with Laboratory		4
CHEM 237	Organic Chemistry I		4
CHEM 239	Organic Chemistry II		3
CHEM 240	Organic Chemistry Laboratory		2
CHEM 247	Analytical Chemistry		3
CHEM 321	Instrumental Analysis		4
CHEM 343	Physical Chemistry I		3
CHEM 344	Physical Chemistry II		4
CHEM 415	Inorganic Chemistry		3
CHEM 434	Spectroscopic Methods in Identification and Analysis		4
CHEM 463	Analytical Method Development Laboratory		3
CHEM 472	Environmental Chemistry		3
CHEM 473	Environmental Analytical Chemistry		3
CHEM 485	Chemistry Colloquium		1
CHEM 495	Seminar in Special Topics		1
Environmental Chemistry Electives			**(6)**
Select two courses from the following:			6
CHEM 410	Science of Climate Change	3	
CHEM 416	Advanced Chemistry Laboratory	3	
CHEM 452	Cheminformatics	3	
CHEM 460	Bioanalytical Chemistry	3	
CHEM 461	Bioanalytical Chemistry Laboratory	3	
CHEM 467	Medicinal Chemistry	3	
CHEM 475	Forensic Chemistry	3	
CHEM 476	Forensic Chemistry Laboratory	3	
CHEM 500	Advanced Analytical Chemistry	3	
CHEM 513	Statistics for Analytical Chemists	3	
CHEM 538	Physical Biochemistry	3	
Biology Requirements			**(6-7)**
BIOL 107	General Biology Lectures		3
or BIOL 115	Human Biology		
BIOL 401	Introductory Biochemistry		3-4
or BIOL 403	Biochemistry		
Mathematics Requirements			**(18)**
MATH 151	Calculus I		5
MATH 152	Calculus II		5
MATH 251	Multivariate and Vector Calculus		4

MATH 252	Introduction to Differential Equations	4
Physics Requirements		**(8)**
PHYS 123	General Physics I: Mechanics	4
PHYS 221	General Physics II: Electricity and Magnetism	4
Computer Science Requirement		**(2)**
CS 105	Introduction to Computer Programming	2
or CS 110	Computing Principles	
Humanities and Social Sciences Requirements		**(21)**
See Illinois Tech Core Curriculum, sections B and C		21
Interprofessional Projects (IPRO)		**(6)**
See Illinois Tech Core Curriculum, section E		6
Free Electives		**(9)**
Select nine credit hours [1]		9
Total Credit Hours		**127-128**

[1] Suggested electives include: BIOL 210, BIOL 445, BIOL 514, ENVE 404, ENVE 463, ITMD 521, ITMD 525, and ITMD 527.

Bachelor of Science in Environmental Chemistry Curriculum

			Year 1
Semester 1	**Credit Hours**	**Semester 2**	**Credit Hours**
CHEM 124	4	CHEM 100	2
CS 105 or 110	2	CHEM 125	4
MATH 151	5	MATH 152	5
Humanities 200-level Course	3	PHYS 123	4
		Social Sciences Elective	3
	14		**18**

			Year 2
Semester 1	**Credit Hours**	**Semester 2**	**Credit Hours**
CHEM 237	4	CHEM 239	3
BIOL 107 or 115	3	CHEM 240	2
MATH 251	4	CHEM 247	3
PHYS 221	4	MATH 252	4
Humanities or Social Sciences Elective	3	Humanities Elective (300+)	3
	18		**15**

			Year 3
Semester 1	**Credit Hours**	**Semester 2**	**Credit Hours**
CHEM 321	4	CHEM 344	4
CHEM 343	3	CHEM 434	4
IPRO Elective I	3	CHEM 472	3
Social Sciences Elective (300+)	3	CHEM 485	1
Free Elective[1]	3	Humanities Elective (300+)	3
	16		**15**

			Year 4
Semester 1	**Credit Hours**	**Semester 2**	**Credit Hours**
BIOL 401 or 403	3-4	CHEM 495	1
CHEM 415	3	Environmental Chemistry Elective[2]	3
CHEM 463	3	Environmental Chemistry Elective[2]	3
CHEM 473	3	IPRO Elective II	3
Free Elective[1]	3	Social Sciences Elective (300+)	3
		Free Elective[1]	3
	15-16		**16**

Total Credit Hours: 127-128

1 Suggested electives include: BIOL 210, BIOL 445, BIOL 514, ENVE 404, ENVE 463, ITMD 521, ITMD 525, and ITMD 527.

2 Choose from the following courses: CHEM 410, CHEM 416, CHEM 452, CHEM 460, CHEM 461, CHEM 467, CHEM 475, CHEM 476, CHEM 500, CHEM 513, or CHEM 538.