BACHELOR OF SCIENCE IN BIOCHEMISTRY WITH ARTIFICIAL INTELLIGENCE*

* Indicates that this program is an Incubator Program. Please visit Incubator Programs for more information.

Required Courses

Code	Title	Credit Hours
Biochemistry Requirements		**(18)**
BIOL 301	Introductory Biochemistry	3
BIOL 402	Metabolic Biochemistry	3
BIOL 404	Biochemistry Laboratory	3
BIOL 412	Structural and Mechanistic Biochemistry	3
CHEM 438	Physical Biochemistry	3
or PHYS 410	Molecular Biophysics	
CHEM 456	Computational Biochemistry and Drug Design	3
Biology Requirements		**(15)**
BIOL 107	General Biology Lectures	3
BIOL 109	General Biology Laboratory	1
BIOL 115	Human Biology	3
BIOL 117	Human Biology Laboratory	1
BIOL 214	Genetics	3
BIOL 445	Cell Biology	3
BIOL 495	Biology Colloquium	1
Chemistry Requirements		**(17)**
CHEM 122 & CHEM 123	Principles of Chemistry I and General Chemistry Laboratory	4
CHEM 126 & CHEM 140	Principles of Chemistry II Without Laboratory and Principles of Chemistry II Lab	4
CHEM 235 & CHEM 236	Organic Chemistry I and Organic Chemistry I-Lab	4
CHEM 239	Organic Chemistry II	3
CHEM 240	Organic Chemistry Laboratory	1
CHEM 485	Chemistry Colloquium	1
Biology or Chemistry classes		**(4)**
BIOL 100	Introduction to the Profession	2
or CHEM 100	Introduction to the Profession	
BIOL 451	Biological Literature	2
or CHEM 451	Undergraduate Seminar	
Certificate in AI Fluency		**(9)**
MATH 123	AI for Computational Mathematics and Coding	3
COM 200	AI, Data, and Communications	3
CS 180	Artificial Intelligence Foundations	3
Certificate in AI Management		**(9)**
DS 151	Introduction to Data Science	3
or BUS 102	Business Analytics Fundamentals	
PHIL 281	Artificial Intelligence, Philosophy and Ethics	3
or PHIL 331	Political Philosophy of Artificial Intelligence	
or PHIL 272	Ethics of Technology and Communication	
or DS 261	Data Ethics and Responsible AI	
BUS 432	Artificial Intelligence in Business	3

Select one of the following		
Upper Division Laboratory		**(3)**
Select at least 3 credits of approved 300+ level lab classes, including:		3
BIOL 431	Animal Physiology Laboratory	3
BIOL 446	Cell Biology Laboratory	3
CHEM 321	Instrumental Analysis	4
CHEM 416	Advanced Chemistry Laboratory	3
CHEM 434	Spectroscopic Methods in Identification and Analysis	4
CHEM 461	Bioanalytical Chemistry Laboratory	3
CHEM 463	Analytical Method Development Laboratory	3
CHEM 476	Forensic Chemistry Laboratory	3
PHYS 300	Instrumentation Laboratory	4
BIOL 491	Biology Research Project	1 TO 3
CHEM 491	Undergraduate Research	1 TO 3
FDSN 494	Special Projects	1 TO 3
Technical Electives		**(3)**
Any 300+ level BIOL or CHEM or FDSN course		3
BME 418	Reaction Kinetics for BME	3
CS 330	Discrete Structures	3
CS 331	Data Structures and Algorithms	3
CS 422	Data Mining	3
CS 484	Introduction to Machine Learning	3
PHYS 410	Molecular Biophysics	3
Physics Requirements		**(8)**
PHYS 123	General Physics I: Mechanics	4
PHYS 221	General Physics II: Electricity and Magnetism	4
or PHYS 223	General Physics III	
Mathematics Requirements		**(10)**
MATH 151	Calculus I	5
MATH 152	Calculus II	5
Statistics Requirement		**(3-4)**
Any statistics course, including:		3 or 4
STAT 225	Introductory Statistics	3
BUS 221	Business Statistics	3
PSYC 203	Undergraduate Statistics for the Behavioral Sciences	4
MATH 425	Statistical Methods	3
BME 433	Biomedical Engineering Applications of Statistics	3
CHEM 513	Statistics for Analytical Chemists	3
Interprofessional Projects (IPRO)		**(6)**
See Illinois Tech Core Curriculum, section E		6
Humanities and Social Science Requirements		**(15)**
See Illinois Tech Core Curriculum, sections B and C		15
Total Credit Hours		**120-121**

AI Requirement DS 151 fulfills the University Computer Science Requirement.

4 Bachelor of Science in Biochemistry with Artificial Intelligence*

AI Requirements COM 200 and PHIL 272/281/380 are counted towards Humanities and Social Science Requirements.

Bachelor of Science in Biochemistry with Artificial Intelligence*

Bachelor of Science in Biochemistry with Artificial Intelligence Curriculum

			Year 1
Semester 1	**Credit Hours**	**Semester 2**	**Credit Hours**
BIOL 100 or CHEM 100	2	BIOL 115	3
BIOL 107	3	BIOL 117	1
BIOL 109	1	CHEM 126 & CHEM 140	4
CHEM 122 & CHEM 123	4	MATH 123	3
MATH 151	5	MATH 152	5
	15		**16**

			Year 2
Semester 1	**Credit Hours**	**Semester 2**	**Credit Hours**
BIOL 214	3	CHEM 239	3
CHEM 235 & CHEM 236	4	CHEM 240	1
PHYS 123	4	PHYS 221	4
DS 151	3	CS 180	3
Social Sciences Elective	3	COM 200	3
	17		**14**

			Year 3
Semester 1	**Credit Hours**	**Semester 2**	**Credit Hours**
BIOL 301	3	BIOL 402	3
STAT 225	3	BIOL 404	3
PHIL 281	3	CHEM 456	3
Social Sciences Elective	3	Technical Electives	3
IPRO	3	IPRO	3
	15		**15**

			Year 4
Semester 1	**Credit Hours**	**Semester 2**	**Credit Hours**
BIOL 412	3	BIOL 451	2
CHEM 438	3	CHEM 485	1
BIOL 445	3	BUS 432	3
BIOL 495	1	Upper Division Laboratory[1]	3
Humanities Elective	3	Humanities Elective	3
		Social Sciences Elective (300+)	3
	13		**15**

Total Credit Hours: 120

[1] CHEM 321 or CHEM 434 should be selected for the chemistry specialization. CS 331 may be selected for the computation specialization.