

Planning Guide: Pharmacology & Toxicology & Data Science Certificate

Below are sample course plans that show how a student might navigate both the Biology major and Data Science certificate. This plan is provided as a tool for students to understand the potential course load between two programs and areas of overlap and non-overlap. Please note that this is a flexible plan and students are not required to follow this plan exactly. Students are strongly encouraged to review the full curriculum for both programs on the Guide and contact relevant advisors for information on course selection.

[Guide link to the Pharmacology & Toxicology major.](#)

[Guide link to the Data Science certificate.](#)

4 YEAR PLAN

	Fall Semester		Spring Semester	
	<i>PharmTox Maj Courses</i>	<i>DS Cert Courses</i>	<i>PharmTox Maj Courses</i>	<i>DS Cert Courses</i>
Year 1	CHEM 103 (4), MATH 221 (5)	COMP SCI 220 (4)	CHEM 104 (5)	
Shared/Gen-Ed's	Electives and gen-ed courses		STAT 240* (4) , Electives and gen-ed courses	
Year 2	CHEM 343 (3), BIO/BOT/ZOO 151 (5)	DS Elective (3)	CHEM 344 (2), CHEM 345 (3), BIO/BOT/ZOO 152 (5)	
Shared/Gen-Ed's	Electives and gen-ed courses		Electives and gen-ed courses	
Year 3	BIOCHEM 507 (3), ANAT&PHY 335 (5), PHM SCI 558 (2), Research (699) credits (2-3)		BIOCHEM 508 (3), PATH 404 (3), PHM SCI 679 (1), PHYSICS 103 (4), Electives in the Major or Additional Research credits (2-3)	
Shared/Gen-Ed's	Electives and gen-ed courses		Electives and gen-ed courses	
Year 4	PHM SCI 625 (3), Additional Pharmacology (2-3), PHYSICS 104 (4), Electives in the Major or Additional Research credits (2-3)	Data Ethics (3-4)	PHM SCI 510 (2), 626 (3), 679 (1), GENETICS 466 (3)	DS Elective (3)
Shared/Gen-Ed's	Electives and gen-ed courses		Electives and gen-ed courses	

Below is a 5-semester and 3-semester plan for students who may have less than two years to complete the Data Science certificate.

5 SEMESTER PLAN

Semester 1	Semester 2	Semester 3	Semester 4	Semester 5
COMP SCI 220 (4)	STAT 240 (4)	Data Ethics (3-4)	DS Elective (3)	DS Elective (3)

3 SEMESTER PLAN

Semester 1	Semester 2	Semester 3
COMP SCI 220 (4), Data Ethics (3-4)	STAT 240 (4) , DS Elective (3-4)	DS Elective (3)

*STAT 240 is an overlapping course between the DS certificate and PharmTox major. There may be additional courses that count such as Biocore. Please consult your advisor for more information.

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