

Bachelor of Science - Translational Life Science Technology - Bioinformatics Track (TLST-BI BS)

Major Requirements	Pre-Requisites (completed with a grade of C or better)	Credits
BTEC 300 - Translational Life Science Technology Survey (WI)	CHEM 101, BIOL 142, and BIOL 302	3
BTEC 303 - Applied Cell Biology	BIOL 302	4
BTEC 310 - Instrumentation and Methods for the Biotechnology Laboratory	CHEM 101, MATH 151/155, PHYS 111/121, BIOL 142, and BIOL 302	3
BTEC 330 - Software Applications for the Life Sciences	MATH 155/151	3
BTEC 344 - Epidemiology	BTEC 303/BIOL 303 and BTEC 350/STAT 350/STAT 355	3
BTEC 350 - Statistics for the Translational Life Sciences	MATH 150/155/151 and BIOL 302	4
BTEC 362 - Introduction to Python Programming with Translational Applications	BTEC 330, and BTEC 350/STAT 350	3
BTEC 395 - Translational Bioinformatics	MATH 151/155, BTEC4 30/BIOL430, and BTEC 350/STAT350	4
BTEC 423 - Machine Learning Applications for Translational Bioinformatics†	BTEC 330, BTEC 350/STAT 350, BTEC 395, and BTEC 362	4
BTEC 424 - Deep Learning Applications for Biomedical Image Analysis†	BTEC 330, BTEC 350/STAT 350, BTEC 362	4
BTEC 430 - Translational Biochemistry and Molecular Biology	CHEM 351 and BTEC 303/BIOL 303	4
BTEC 444 - Translational Cancer Biotechnology	BTEC 303/BIOL 303	3
BTEC 453 - Biochemical Engineering	MATH 155/151, PHYS 111/121, and CHEM 351	4
BTEC 495 - Professional Internship	BTEC 310 and BTEC 350	6
Supporting Coursework*		
BIOL 141 - Foundations of Biology: Cells, Energy, & Organisms	MATH 150/155/151	4
BIOL 142 - Foundations of Biology: Ecology & Evolution	BIOL 141, MATH 150/155/151	4
BIOL 300L - Experimental Biology Laboratory	MATH 150/155/151, BIOL 302, CHEM 102, CHEM 102L	2
BIOL 302 - Molecular & General Genetics	BIOL 141, BIOL 142, CHEM 101 and MATH 150/155/151, plus CHEM102 (pre- or co-req)	4
BIOL 275 or BIOL 375 - Microbiology	BIOL 141	3
CHEM 101- Principles of Chemistry I	MATH 106	4
CHEM 102 - Principles of Chemistry II*	CHEM 101	4
CHEM 102L - Introductory Chemistry Lab I*	CHEM 101; 102 (pre-/co-req)	2
CHEM 351 - Organic Chemistry I*	CHEM 102	3
CHEM 351L - Organic Chemistry Lab I*	CHEM 102L; 351 (pre-/co-req)	2
ENGL 101 - English Foundations		3
MATH 155 - Applied Calculus OR MATH 151 - Calculus & Analytical Geometry I	MATH 106/qualifying Math Assessment score (MATH 150/qualifying Math Assessment score)	4
PHYS 111 - Basic Physics I OR PHYS 121 - Introductory Physics I		4

* Supporting Coursework must be completed prior to entry into the TLST major. Pre-requisites and course availability shown in this section reflect UMBC coursework only. Students transferring in the Supporting coursework should consult the catalog of their institution of origin for accurate pre-requisite and course availability information.

† Students must take EITHER BTEC 423 OR BTEC 424