

Topic	Core (C) / Elective (E)	Beginners	Intermediate	Advanced	Hours (credit hours differ based on Insitution)
Molecular biology/Genetics/Biochemistry for programmers	C	x			40 hours
Introduction to programming for biologists	C	x			40 hours
Programming I (through out or dedicate block time e.g 1 month)	C		x		80 - 100 hours
Biostatistics I	C	x			40 hours
Databases (theory, design, implementation) I	C	x			40 hours
Genomics & Comp genomics	C		x		40 hours
Sequence analysis (alignment, function etc)	C		x		40 hours
Biological Databases and Ontologies	C		x		20 hours
Life skills presentations, science writing, grant writing, plagiarism	C	x			15 hours
Ethics	C	x			2 hours
Evolution, phylogenetics	C / E		x		40 hours
Population genetics and GWAS	C / E		x		40 hours
NGS	C / E	x			40 hours
Structural bioinformatics	C / E		x		40 hours
Biostatistics II	E		x		40 hours
Mathematics for biologists	E	x			40 hours
Databases (platforms, scalability, warehousing) II	E		x		40 hours
Programming II (Data structures, algorithms)	E		x		40 hours
Web Programming (web site formats, XML, XMLST)	E		x		40 hours
Machine learning	E	x			40 hours
Networks and pathways	E		x		40 hours
Proteomics	E		x		40 hours
Biomedical text mining	E		x		40 hours
Metabolomics	E		x		40 hours