



Program Outcomes for Bachelor's Degree – Bioinformatics Option

As required of all students graduating with a bachelor's degree in Computer Science at Utah State University, students graduating with a **bioinformatics emphasis** must demonstrate the following:

1. Proficiency in programming in at least two programming languages that have significance in industry
2. Mastery of the following core curriculum
 - a. Data structures and algorithms
 - b. Computer architecture and organization
 - c. Programming languages
 - d. Operating systems
 - e. Software engineering
3. Understanding of the practices and dynamics required to develop software whether it be a single program or a major software product developed in a team environment
4. Proficiency in the use of mathematical tools including calculus, and elementary statistics and probability
5. Sufficient mastery of fundamental knowledge of computer science to be a life-long learner
6. Understanding of the social and ethical issues that face computer scientists, thus being able to contribute to society in a positive and productive manner
7. Ability to communicate information effectively both in writing and orally

In addition to the core objectives listed above, students who graduate in the **bioinformatics emphasis** must also demonstrate the following:

1. Proficiency in the use of advanced mathematical tools, including discrete mathematics, linear algebra, and advanced statistical methods
2. Understanding of the scientific method
3. Sufficient background in biology and chemistry to understand the central research questions in the field of bioinformatics
4. Mastery of current computational bioinformatics techniques