

## Bachelors of Science in Computer Science

### Program Description

The Computer Science program at Snow College is a dynamic program that capitalizes on three innovative educational modalities: high touch, wide accessibility, and broad integration with industry. The high touch is attained by emphasizing laboratory- and industrial-applicable projects. It is widely accessible due to its online components, increasing the distance at which students can enroll. It is integrated with industry as our yet-to-be-identified partners will help develop the program to match their individual niches.

The program emphasizes a “learn by doing” approach by focusing on three critical skill areas: programming languages and software development, computer application, and problem-solving using algorithms and algorithm analysis.

Students in the Computer Science program are taught correct and effective programming practices via a variety of computer languages. Students are trained to work in a collaborative environment as they work through all stages of software development. They do this by a group-centered education as well as through integration with the development groups of our industry partners. This approach is designed to develop and strengthen student problem-solving skills with an emphasis on creating, implementing and analyzing algorithms.

The program offers two emphases: Computer Science, preparing students for scientific and technical careers as well as the pursuit of graduate level degrees; and Software Development, preparing students for careers in robust software development for business and industry.

The curriculum follows the 2013-2104 Criteria for Accrediting Computing Programs by ABET:

<u>Course Category</u>	<u>Credit Hours</u>
Computer Science	53
Mathematics	21
Science	10
General Education	36
<b>Total</b>	<b>120</b>

### Purpose and Need of the Degree

The purpose of the Computer Science degree is to meet the industrial demand for high-end computer system analysts and programmers. A recent listing of the top 20 fastest growing jobs in Utah from 2004 to 2014 indicates that five of these twenty are computer-related. (Source: <http://pattyinglishms.hubpages.com/hub/Jobs-in-Utah>)

This demand requires a capable workforce to fill these positions. At Snow College, we pride ourselves in creating capable students with a strong knowledge base to give them an edge in attaining employment in this demanding field. The degree is designed to be at the deeper end of the knowledge pool in the area of computer science.

In determining whether the program matches statewide initiatives, goals and priorities, one simply needs to examine the incentives and effort being put into the STEM education area. An example of this effort can be found at the Utah Governors Office of Economic Development page which houses the STEM Action Center. (Source: <http://business.utah.gov/programs/STEM/>) This page outlines a number of opportunities as well as the need for individuals to obtain STEM degrees. The proposed Computer Science program is directly related to and supportive of these initiatives.

As concerns the local economy, it has been suggested that there is a draw to our local area, as individuals with computer science skills and degrees are able to relocate at will, since many of those employed in this field are able to work remotely. The hope is that computer science employees will prefer to reside in our rural counties to better enjoy the enticing qualities of life that are available here. In essence, it is our hope to drive the local economy by attracting individuals from the northern silicon slopes a few counties south.

### **Strategic Plan**

This program matches a number of areas in the Snow College Strategic Plan. Consider, for example, the Economic Development and Workforce Preparation section. On page 12 of the plan, three listed items are:

2. Structure programming in order to maximize opportunities for students, create logical pathways, and provide the most prepared students to industry
3. Increase the standard of living in the six-county region, providing career opportunities for graduates of Snow College, through economic development partnerships
4. Create educational opportunities that are more accessible/flexible

The proposed program attempts to address each of these items. The first, by creating a high-end computer science degree; second, by providing degrees in which graduates can live in our rural area thus allowing high-income individuals to remain local; third, by creating a degree that is highly accessible at a distance.

### **Summary**

The proposed Computer Science degree seems to match the desires of both local and state entities. It appears to improve economies. It can be implemented with a minimal investment. In short, it makes sense for Snow College and its students.