

Certificate: Computer Programming

Certificate Description:

The computer programming certificate provides students with an understanding of how to design and develop programs in a variety of computer languages, including Javascript, Python, PHP, and Java. This certificate is developed and granted by BYU-Idaho.

Course Code	Course Name	15 Credits
CSPC 101	Introduction to Programming	2 Credits
CIT 160	Introduction to Programming	3 Credits
CS 241	Survey Object-Oriented Programming/Data Structures	4 Credits
CS 213	Web Engineering	3 Credits
CS 246	Software Design and Development	3 Credits

Course Descriptions:

CSPC 101 (2 credits) – Introduction to Programming

This course introduces computer programming intended for people with no programming experience. This course covers the basics of programming in Python, including elementary data types (numeric types, strings, lists, dictionaries and files), control flow, functions, objects, methods, fields, and mutability.

CIT 160 (3 credits) – Introduction to Programming

This course is an introduction to the basic concepts of computers and information technology. Students will learn the basics of computer hardware and the binary and hexadecimal number systems, design algorithms to solve simple computing problems, and write computer programs using Boolean logic, control structures, and functions.

CS 241 (4 credits) – Survey Object-Oriented Programming/Data Structures

This course introduces object-oriented programming and common data structures.

CS 213 (3 credits) – Web Engineering

Internet and web basics, web fundamentals, web browsers, web servers, and web terminology. This course teaches the concepts behind the fundamental tools used for building client-side web applications.

CS 246 (3 credits) – Software Design and Development

Advanced object-oriented designs and software development.

Outcomes:

- Learn and apply new technology and techniques to programming using Python, HTML/CSS, Java, and JavaScript
- Apply well-developed design and problem-solving skills
- Demonstrate a firm understanding of the principles of programming and software design
- Convert software requirement into code
- Demonstrate strong communication and interpersonal skills

Potential Employment:

- Freelance programmer
- Member of a programming team