COMPUTER SCIENCE: SOFTWARE ENGINEERING

The Software Engineering program is designed to prepare students for industry or graduate work in software development, computer science, web application development, or management information systems. The program uses a blend of traditional computer science curriculum with requisite mathematical rigor, and is designed to be flexible to allow students to use blend learning from many topics. Students take courses in web development and design, portfolio development, database knowledge and management, and advanced design and computation theory.

Upon completion of this degree, students will:
- Design and implement object-oriented and imperative programs
- Understand and apply algorithms and data structures
- Understand and describe the use of relational databases
- Demonstrate knowledge of the scientific method and perform laboratory analysis
- Construct and design a web page, site, or application
- Research and describe solutions to customer requirements through a capstone project
- Implement cybersecurity risk management concepts
- Prepare professional oral and written forms of communication
- Evaluate and apply knowledge in software development in support of decision making

Code	Title	Credits
Written Communication		
Select from the following:		6.00
ENGL-101 & ENGL-102	WRITING AND RHETORIC I and WRITING AND RHETORIC II	
ENGL-109	COLLEGE WRITING AND RESEARCH	
Oral Communication		
Select one from the following:		3.00
COMM-101	FUNDAMENTALS OF ORAL COMMUNICATION	
COMM-203	SMALL GROUP COMMUNICATION	
COMM-204	PUBLIC SPEAKING	
Mathematical Ways of Knowing		
Select one from the following:		3.00-5.00
MATH-143	PRECALCULUS I: ALGEBRA	
MATH-147	PRECALCULUS	
MATH-153	STATISTICAL REASONING	
MATH-170	CALCULUS I	
MATH-254	STATISTICAL METHODS	
MATH-257	MATHEMATICS FOR ELEMENTARY TEACHERS II	
MTHPT-153	STATISTICAL REASONING	
Humanistic & Artistic Ways of Knowing		
Select two courses from two different categories (Literature, Arts, Language).		6.00-7.00
Literature		
ENGL-175	LITERATURE AND IDEAS	
ENGL-257	WORLD CLASSICS	
ENGL-258	INTERNATIONAL LITERATURE (*)	
ENGL-260	NATIVE AMERICAN LITERATURE (*)	
ENGL-261	MYTHOLOGIES	
Arts		
ART-100	INTRODUCTION TO ART	
HUM-101	THE ART AND HISTORY OF THE MOTION PICTURE	
HUM-150	INTRODUCTION TO THE ARTS	
MUS-101	SURVEY OF MUSIC	
MUS-102	MUSIC IN AMERICA	
MUS-150	WORLD MUSIC	
MUS-151	HISTORY OF MUSICAL THEATER	

MUS-152	HISTORY OF JAZZ AND POPULAR MUSIC STYLES	
THEA-101	SURVEY OF THE THEATER	
Language		
NP-101	NEZ PERCE LANGUAGE AND CULTURE (*)	
NP-102	NEZ PERCE LANGUAGE AND HISTORY (*)	
SPAN-101	ELEMENTARY SPANISH I (*)	
SPAN-102	ELEMENTARY SPANISH II (*)	
Scientific Ways of Knowing		
Take all of the following:		
BIOF-100	INTRODUCTION TO BIOINFORMATICS	3.00
Any LAB Science		4.00
Social & Behavioral Ways of Knowing		
Select two courses from two different disciplines:		6.00
ANTH-102	CULTURAL ANTHROPOLOGY (*)	
ANTH-120	WORLD PREHISTORY (*)	
ANTH-170	INTRODUCTION TO NATIVE AMERICAN STUDIES (*)	
ECON-201	PRINCIPLES OF MACROECONOMICS	
ECON-202	PRINCIPLES OF MICROECONOMICS	
GEOG-102	INTRODUCTION TO GEOGRAPHY (*)	
HIST-101	WORLD HISTORY I (*)	
HIST-102	WORLD HISTORY II (*)	
HIST-111	UNITED STATES HISTORY I (*)	
HIST-112	UNITED STATES HISTORY II (*)	
HRPT-184	DIVERSITY IN ORGANIZATIONS (*)	
or SS-184	DIVERSITY IN ORGANIZATIONS	
HRPT-185	HUMAN RELATIONS IN ORGANIZATIONS	
or SS-185	HUMAN RELATIONS IN ORGANIZATIONS	
POLS-101	AMERICAN NATIONAL GOVERNMENT	
POLS-237	INTERNATIONAL POLITICS	
POLS-285	COMPARATIVE GOVERNMENT (*)	
PSYC-101	INTRODUCTION TO GENERAL PSYCHOLOGY	
PSYC-205	LIFESPAN DEVELOPMENTAL PSYCHOLOGY	
SOC-101	INTRODUCTION TO SOCIOLOGY	
SOC-102	SOCIAL PROBLEMS (*)	
Global Perspectives		
Select one from the following:		3.00
Courses above designated with an asterisk (*) are eligible to fulfill the Global Perspectives requirement. Please note that an asterisked course may not be used to satisfy more than one core requirement.		
ANTH-360	RACE AND ETHNICITY	
COMM-345	INTERCULTURAL COMMUNICATION	
ENGL-474	NATIVE AMERICAN WRITTEN LITERATURE	
ID-300C	ETHICS AND IDENTITY	
KIN-220	SOCIAL-CULTURAL ASPECTS OF SPORTS	
SPAN-201	INTERMEDIATE SPANISH I	
SPAN-202	INTERMEDIATE SPANISH II	
Integrative Seminar: Ethics/Values		
Select one of the following:		3.00
ID 300A - 300Z (see course descriptions for options)		
ID-301A	HELLS CANYON INSTITUTE	
Total Credits		**37.00-40.00**

Code	Title	Credits
Take all of the following:		
BUS-311	FOUNDATIONS OF MANAGEMENT THEORY	3.00
BUS-355	INFORMATION SYSTEMS FOR MANAGERS	3.00
BUS-360	LEADERSHIP	3.00
CS-111	COMPUTER SCIENCE 1	4.00
CS-211	COMPUTER SCIENCE II	4.00
CS-226	SQL: STRUCTURED QUERY LANGUAGE	3.00
CS-311	ALGORITHMS AND DATA STRUCTURES	4.00
CS-360	SOFTWARE ENGINEERING	3.00
CS-394	INTERNSHIP IN COMPUTER SCIENCE	3.00
CS-401	FUTURE PROFESSIONALS SEMINAR	1.00
CS-445	DATABASES AND KNOWLEDGE MANAGEMENT	3.00
CS-480	CAPSTONE DESIGN PROJECT	4.00
CYB-300	CYBER ETHICS	3.00
CYB-360	CYBERSECURITY MANAGEMENT	3.00
MATH-186	DISCRETE MATHEMATICS	3.00
WEB-111	FOUNDATIONS OF WEB DEVELOPMENT	3.00
WEB-112	FUND OF PROG: JAVASCRIPT	3.00
WEB-117	WEB DESIGN FUNDAMENTALS	3.00
WEB-180	PORTFOLIO DESIGN	3.00
WEB-265	IMAGE EDIT & ILLUSTRATION	3.00
WEB-275	WEB AUTHORING	3.00
Choose 15 credits from:		
Any BUS, CS, CYB, or WEB course, level 300 and above.		15.00
Choose 3 elective credits:		
Any course numbered 100 and above.		3.00
Total Credits		**83.00**

Course	Title	Credits
First Year		
Fall		
ENGL-101	WRITING AND RHETORIC I	3.00
WEB-111	FOUNDATIONS OF WEB DEVELOPMENT	3.00
CORE	Oral Communication	3.00
CORE	Humanistic & Artistic Ways of Knowing	3.00
CORE	Mathematical Ways of Knowing	3.00
	Credits	**15.00**
Spring		
BIOF-100	INTRODUCTION TO BIOINFORMATICS	3.00
ENGL-102	WRITING AND RHETORIC II	3.00
WEB-112	FUND OF PROG: JAVASCRIPT	3.00
CORE	Social & Behavioral Ways of Knowing	3.00
CORE	Humanistic & Artistic Ways of Knowing	3.00
	Credits	**15.00**
Second Year		
Fall		
CORE	Social & Behavioral Ways of Knowing	3.00
CORE	Scientific Ways of Knowing Lab	4.00
WEB-117	WEB DESIGN FUNDAMENTALS	3.00
WEB-180	PORTFOLIO DESIGN	3.00

CS-111	COMPUTER SCIENCE 1	4.00
	Credits	**17.00**
Spring		
CS-211	COMPUTER SCIENCE II	4.00
MATH-186	DISCRETE MATHEMATICS	3.00
WEB-265	IMAGE EDIT & ILLUSTRATION	3.00
WEB-275	WEB AUTHORING	3.00
Elective	Take 3 credits of electives	3.00
	Credits	**16.00**
Third Year		
Fall		
Elective	Take 3 credits of upper division electives from BUS, CS, CYB, or WEB course	3.00
Elective	Take 3 credits of upper division electives from BUS, CS, CYB, or WEB course	3.00
CYB-300	CYBER ETHICS	3.00
CS-394	INTERNSHIP IN COMPUTER SCIENCE	3.00
CORE	Global Perspectives	3.00
	Credits	**15.00**
Spring		
CS-226	SQL: STRUCTURED QUERY LANGUAGE	3.00
CS-311	ALGORITHMS AND DATA STRUCTURES	4.00
CS-360	SOFTWARE ENGINEERING	3.00
Elective	Take 3 credits of upper division electives from BUS, CS, CYB, or WEB course	3.00
CORE	Integrative Seminar	3.00
	Credits	**16.00**
Fourth Year		
Fall		
BUS-311	FOUNDATIONS OF MANAGEMENT THEORY	3.00
BUS-360	LEADERSHIP	3.00
CS-401	FUTURE PROFESSIONALS SEMINAR	1.00
CS-445	DATABASES AND KNOWLEDGE MANAGEMENT	3.00
Elective	Take 3 credits of upper division electives from BUS, CS, CYB, or WEB course	3.00
	Credits	**13.00**
Spring		
CS-480	CAPSTONE DESIGN PROJECT	4.00
CYB-360	CYBERSECURITY MANAGEMENT	3.00
BUS-355	INFORMATION SYSTEMS FOR MANAGERS	3.00
Elective	Take 3 credits of upper division electives from BUS, CS, CYB, or WEB course	3.00
	Credits	**13.00**
	Total Credits	**120.00**