COMPUTER SCIENCE (B.S.)

The Bachelor of Science in Computer Science provides students a rigorous curriculum beginning with a thorough grounding in a set of core subjects that are intended to develop problem solving ability and provide a basic understanding of fundamentals of computing and information processing, including operating systems design and administration, computer networking and database systems. Students, through a choice of electives, may deepen their knowledge and understanding in some rapidly evolving disciplines, including how to design and build software in software engineering, how to develop effective ways to solve global challenges using artificial intelligence, machine learning, and robotics programming, and how to create better ways of using computer with an understanding of cybersecurity and data analysis. The anticipated end result is a set of graduates who are prepared for their chosen scientific career in the field of computing, be it graduate school or employment.

Integrative Studies Requirements

Minimum 40 credits

Code	Title	Credits	Completed
Major Requirements (58-66 credits)			_____
Core Requirements:			_____
ISCS-140	Programming Foundations I	4	_____
CS-185	Programming Foundations II	4	_____
CS-265	Computer Architecture	4	_____
CS-280	Data Structures & Algorithms	4	_____
CS-355	Computer Networks	4	_____
CS-360	Database Systems	4	_____
ISCS-150	Website Design & Construction	4	_____
or INCS-160	Microcomputer Systems		_____
CS-215	OS Administration	4	_____
or CS-320	Operating Systems Design		_____
CS-293	Supervised Field Experience	2	_____
or CS-493	Adv Supervised Field Experienc		_____
*Select **one** of the following:*		*4*	_____
ISCS-210	Python Programming		_____
CS-225	C++ Programming		_____
CS-290	Special Topics (with department approval)		_____
Mathematics Requirements:			_____
MATH-111	Applied College Algebra (may be waived by CS Department chair)	4	_____
MATH-112	Precalculus (may be waived by CS Department chair)	4	_____
MATH-135	Discrete Mathematics for CS	4	_____
MATH-211	Calculus I	4	_____
MATH-141	Introductory Statistics (*recommended but not required)		_____
MATH-212	Calculus II (*recommended but not required)		_____
Upper-Level Requirements:			_____
*Select **three** of the following; **two** must be 400-level courses:*		*12*	_____
IICS-350	Cybercrime		_____
IIPHYS-342	Data Analysis for Scientists		_____
CS-375	Software Engineering		_____
CS-395	Mobile Device App Programming		_____
CS-420	E-Commerce Development		_____
CS-430	Principles Program Languages		_____
CS-455	Crypt & Network Security		_____
CS-490	Advanced Special Topics		_____
CS-495	AI & Robotics		_____
CS-498	Independent Study		_____
Total Credits		**66**	_____

It is strongly recommended for students to consider participating in either CS-297 Internship or CS-497 Advanced Internship.

Electives

Select courses to reach a total of 120 credits for the degree.

Degree Requirements

120 credits
40 credits at the upper-level

Upon completion of the Computer Science B.S. degree, students will be able to:

- Demonstrate software development skills in at least one computer programming language through the commonly accepted level of data structures.
- Demonstrate understanding of fundamental data structures and algorithms.
- Demonstrate an introductory understanding of computer architecture and/or operating systems other than Microsoft Windows (currently Linux, Unix or iSeries).
- Demonstrate understanding in fundamental mathematical concepts in order to be competent computer scientists
- Demonstrate technical skills in completing mathematical processes.
- Demonstrate software development skills in at least one other computer programming language not taught in item 1 above.