

Program: Software Development

Instruction in the Software Development program includes designing, coding, and implementing software applications in a variety of programming languages: SQL, Java, C Sharp, Python. In addition, students build skills in problem-solving, attention to detail, communication, and teamwork. There are two new certifications, Business Data Analytics and Software Development, both of which feature open source programming. Business and Data Analytics develop skills with SQL, Business Intelligence, and Visualization, and the Software Development certificate focuses on mobile application development and data structures.

For program costs and fees refer to the catalog TUITION AND FEES PAGE.

Program Learning Outcomes

- 1 Write application software that makes efficient and secure use of operating system services
- 2 Develop an information system using accepted software development processes
- 3 Produce user applications using a specialized technology that builds upon fundamental software development practices
- 4 Apply principles of human-computer interaction in the design of computer interfaces
- 5 Analyze a problem and identify the appropriate data, hardware components and/or software requirements to develop a feasible solution
- 6 Use current tools and practices that support the software documentation process
- 7 Document system requirements and/or developing materials for clients in the proper use of hardware or software
- 8 Work cooperatively and effectively in teams to accomplish a shared goal
- 9 Analyze local and global information technology (IT) trends, while recognizing the influences of IT on cultural, economic, ethical, and legal issues and responsibilities
- 10 Support the management of information systems
- 11 Use industry standard digital media/multimedia hardware and software

Program: Software Development

Degree	Quarter	Course ID	Title	Prerequisites	Credits	
SOFTWARE DEVELOPMENT AAS(95)	1 Required Courses	SOFT101	Introduction to Information Technology		5	
		SOFT102	Programming Fundamentals with JavaScript		5	
		WEB102	Web Development I		5	
	2 Required Courses	DATA101	Database Design and SQL		5	
		DATA104	Excel for Analytics		5	
	3 Required Courses	DATA102	Advanced SQL	DATA101	5	
		SOFT121	C-Sharp I		5	
		SOFT123	Web Programming w/JavaScript	SOFT102	5	
	4 Required Courses	SOFT207	Web Application Development	SOFT123	5	
		SOFT290	Capstone Project		5	
		CS&141	Computer Science 1 Java		5	
		SOFT204	Open Source Programming		5	
	Choose Data Analysis Track					
			DATA207	Data Visualization		5
5		DATA205	Business Data Analytics I - SQL Server Administration	DATA104	5	
		DATA206	Business Data Analytics II- Intro to Business Intelligence	DATA104	5	
Or Software Development Track						
		SOFT210	Mobile Application Development I	CS&141	5	
		SOFT144	Data Structures	CS&141	5	

Program: Software Development

SOFT211	Mobile Application Development II	SOFT211	5
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Program: Software Development

General Education Requirements

Note: See a Career Advisor prior to choosing courses that meet general education requirements.

Degree	Gen Ed Area	Course Options		Credits	
AAS	Communications (5 credits required)	ENGL&101	ENGLISH COMPOSITION I	5	
	HUM/SS/NS/O (10 credits required)	BIOL&160	GENERAL BIOLOGY	5	
		BIOL&175	HUMAN BIOLOGY WITH LAB	5	
		BIOL&241	ANATOMY & PHYSIOLOGY I	5	
		BIOL&242	HUMAN A&P II	5	
		BIOL&260	MICROBIOLOGY	5	
		CHEM&121	INTRODUCTION CHEMISTRY	5	
		CHEM&131	Null	5	
		CMST&102	INTRO TO MASS MEDIA	5	
		CMST&152	INTERCULTURAL COMM	5	
		CMST&210	INTERPERSONAL COMMUNICTN	5	
		CMST&220	PUBLIC SPEAKING	5	
		CMST&230	SML GROUP COMMUNICATIONS	5	
		ECON&201	MICROECONOMICS	5	
		ECON&202	MACROECONOMICS	5	
		NUTR&101	INTRO TO NUTRITION	5	
		PHYS&221	ENGINEERING PHYS I W/LAB	5	
		PHYS&222	ENGINEER PHYS II W/LAB	5	
		PHYS&223	ENGINEER PHYS III W/LAB	5	
		POLS&101	INTRO TO POL SCIENCE	5	
		PSYC&100	GENERAL PSYCHOLOGY	5	
		PSYC&200	LIFESPAN PSYCHOLOGY	5	
		SOC&101	INTRO TO SOCIOLOGY	5	
		Quantitative (5 credits required)	MATH&107	MATH IN SOCIETY	5
			MATH&141	PRECALCULUS I	5
			MATH&146	INTRODUCTION TO STATS	5

Program: Software Development

Degree	Quarter	Course ID	Title	Prerequisites	Credits	
SOFTWARE DEVELOPMENT AAS-T (105)	1	Required Courses	SOFT101	Introduction to Information Technology		5
		SOFT102	Programming Fundamentals with JavaScript		5	
		WEB102	Web Development I		5	
	2	Required Courses	DATA101	Database Design and SQL		5
			DATA104	Excel for Analytics		5
	3	Required Courses	DATA102	Advanced SQL	DATA101	5
			SOFT121	C-Sharp I		5
			SOFT123	Web Programming w/JavaScript	SOFT102	5
	4	Required Courses	SOFT207	Web Application Development	SOFT123	5
			SOFT290	Capstone Project		5
			SOFT204	Open Source Programming		5
		Required Courses	CS&141	Computer Science 1 Java		5
			Choose Data Analysis Track			
			DATA205	Business Data Analytics I - SQL ServerAdministration	DATA104	5
			DATA206	Business Data Analytics II- Intro to Business Intelligence	DATA104	5
		DATA207	Business Data Analytics III - Visualization		5	
		Or Software Development Track				
		SOFT210	Mobile Application Development I	CS&141	5	

Program: Software Development

	SOFT144	Data Structures	CS&141	5
	SOFT211	Mobile Application Development II	SOFT211	5

Program: Software Development

General Education Requirements

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Degree	Gen Ed Area	Course Options		Credits
AAS-T	Communications (5 credits required)	ENGL&101	ENGLISH COMPOSITION I	5
	HUM/SS/NS/O (15 credits required)	BIOL&160	GENERAL BIOLOGY	5
		BIOL&175	HUMAN BIOLOGY WITH LAB	5
		BIOL&241	ANATOMY & PHYSIOLOGY I	5
		BIOL&242	HUMAN A&P II	5
		BIOL&260	MICROBIOLOGY	5
		CHEM&121	INTRODUCTION CHEMISTRY	5
		CHEM&131	Null	5
		CMST&102	INTRO TO MASS MEDIA	5
		CMST&152	INTERCULTURAL COMM	5
		CMST&210	INTERPERSONAL COMMUNICTN	5
		CMST&220	PUBLIC SPEAKING	5
		CMST&230	SML GROUP COMMUNICATIONS	5
		ECON&201	MICROECONOMICS	5
		ECON&202	MACROECONOMICS	5
		NUTR&101	INTRO TO NUTRITION	5
		PHYS&221	ENGINEERING PHYS I W/LAB	5
		PHYS&222	ENGINEER PHYS II W/LAB	5
		PHYS&223	ENGINEER PHYS III W/LAB	5
		POLS&101	INTRO TO POL SCIENCE	5
		PSYC&100	GENERAL PSYCHOLOGY	5
		PSYC&200	LIFESPAN PSYCHOLOGY	5
		SOC&101	INTRO TO SOCIOLOGY	5
	Quantitative (10 credits required)	MATH&107	MATH IN SOCIETY	5
		MATH&141	PRECALCULUS I	5
		MATH&146	INTRODUCTION TO STATS	5

Program: Software Development

Degree	Quarter	Course ID	Title	Prerequisites	Credits
SOFTWARE DEVELOPMENT ELEMENTS CERTIFICATE COC (65)	Required Courses	SOFT101	Introduction to Information Technology		5
		SOFT102	Programming Fundamentals with JavaScript		5
		WEB102	Web Development I		5
	Required Courses	DATA101	Database Design and SQL		5
		DATA104	Excel for Analytics		5
	Required Courses	DATA102	Advanced SQL	DATA101	5
		SOFT121	C-Sharp I		5
		SOFT123	Web Programming w/JavaScript	SOFT102	5
	Required Courses	SOFT207	Web Application Development	SOFT123	5
		SOFT290	Capstone Project		5
		Required C.	CS&141	Computer Science 1 Java	

General Education Requirements

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Degree	Gen Ed Area	Course Options		Credits			
COC	Communications (5 credits required)	ENGL175	PROFESSIONAL WRITING	5			
		ENGL&101	ENGLISH COMPOSITION I	5			
	HUM/SS/NS/O (5 credits required)		BIOL&160	GENERAL BIOLOGY	5		
			BIOL&175	HUMAN BIOLOGY WITH LAB	5		
			BIOL&241	ANATOMY & PHYSIOLOGY I	5		
			BIOL&242	HUMAN A&P II	5		
			BIOL&260	MICROBIOLOGY	5		
			CHEM&121	INTRODUCTION CHEMISTRY	5		
			CHEM&131	Null	5		
			CMST&102	INTRO TO MASS MEDIA	5		
			CMST&152	INTERCULTURAL COMM	5		
			CMST&210	INTERPERSONAL COMMUNICTN	5		
			CMST&220	PUBLIC SPEAKING	5		
			CMST&230	SML GROUP COMMUNICATIONS	5		
			ECON&201	MICROECONOMICS	5		
			ECON&202	MACROECONOMICS	5		
			HIST101	HISTORY-SCIENCE/TECH	5		
			HREL111	COLLEGE/JOB SRCH SUCCESS	5		
			NUTR&101	INTRO TO NUTRITION	5		
			PHYS&221	ENGINEERING PHYS I W/LAB	5		
			PHYS&222	ENGINEER PHYS II W/LAB	5		
			PHYS&223	ENGINEER PHYS III W/LAB	5		
			POLS&101	INTRO TO POL SCIENCE	5		
			PSYC&100	GENERAL PSYCHOLOGY	5		
			PSYC&200	LIFESPAN PSYCHOLOGY	5		
			SOC&101	INTRO TO SOCIOLOGY	5		
			Quantitative (5 credits required)		MATH171	TECHNICAL MATH	5
					MATH172	APPLIED BUSINESS MATH	5
					MATH173	MATH CONCEPTS	5
	MATH&107	MATH IN SOCIETY			5		
	MATH&141	PRECALCULUS I			5		
	MATH&142	PRECALCULUS II			5		
MATH&146	INTRODUCTION TO STATS	5					
MATH&151	CALUCLUS I	5					
MATH&152	CALCULUS II	5					
MATH&153	CALCULUS III	5					

Program: Software Development

Degree	Quarter	Course ID	Title	Prerequisites	Credits
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General Education Courses removed
Duplicate CoC removed

BUSINESS DATA ANALYTICS CoT (35)	2	Required Courses	DATA101	Database Design and SQL		5
			DATA104	Excel for Analytics		5
	3	Required Courses	DATA102	Advanced SQL	DATA101	5
	4	Required Courses	DATA205	Business Data Analytics I - SQL Server Administration	DATA104	5
	5	Required Courses	DATA206	Business Data Analytics II- Intro to Business Intelligence	DATA104	5
			DATA207	Business Data Analytics III - Visualization		5
		Required Courses	SOFT204	Open Source Programming		5