

IT WEB SOFTWARE DEVELOPMENT

About the IT Web Software Developer Program

Gain a solid foundation in software application design and programming. You'll learn how to design and write programs using various programming languages as well as basic computer hardware and networking principles.

PROGRAM OUTLINE

COURSE #	COURSE TITLE	CREDITS
1010210600	<p>Business Orientation</p> <p>Introduces students to the topics of business and allows them to experience the expectations and rigor of the program. Students also participate in self-assessments to provide feedback and self-awareness of the relationship between interest and aptitude for the program.</p> <p>Competencies</p>	1.00
	<p>10102106C01 Business Orientation</p> <p>Business Orientation Introduces students to the topics of business and allows them to experience the expectations and rigor of the program. Students also participate in self-assessments to provide feedback and self-awareness of the relationship between interest and aptitude for the program.</p>	1.00
1010311500	<p>MS Word Beginning</p> <p>Provides practice in using basic word processing functions and features of MS Word.</p> <p>Competencies</p>	1.00
	<p>10103115C01 MS Word Beginning</p> <p>Students will apply word processing features to create business documents.</p>	1.00
1010312600	<p>MS Excel Beginning</p> <p>Develops skills in using basic spreadsheet functions of MS Excel for business users.</p> <p>Competencies</p>	1.00
	<p>10103126C01 MS Excel Beginning</p> <p>Students will apply spreadsheet functions to create business documents.</p>	1.00
1010314900	<p>MS Visio</p> <p>Students are introduced to MS Visio. Students will use MS Visio to create flowcharts, network diagrams, floor plans, and other related documents. MS Visio is a tool that is used to create both physical and logical diagrams.</p> <p>Competencies</p>	1.00
	<p>10103149C01 MS Visio</p> <p>In this course you will learn how to use MS Visio to create flowcharts, network diagrams, floor plans, organizational charts, and cross-functional flowcharts that are used in business today.</p>	1.00
1010712700	IT Careers	1.00

COURSE #	COURSE TITLE	CREDITS
	Students research career possibilities in the IT field career and the paths and skills necessary to obtain those positions.	
	Competencies	
10107127C01	IT Careers This course will explore various fields with in the IT career and what skills are desired for each field.	1.00
1015011400	Networking 1 This course is designed as an introduction to data network technology. It is the first in a series of two courses leading toward Cisco Certified Entry Network Technician (CCENT). Students will gain a basic understanding of routers and switches, their function and how to perform initial configurations in the Internetwork Operating System (IOS) of these devices. Students will setup various LAN hardware to implement a workable local area network to include, subnetting and variable length subnetting. Student will gain a solid foundation in network standards using both the OSI and TCP/IP reference models.	3.00
	Competencies	
10150114C01	Networking 1A This course will explore what a network is in today's world, identify the various networking equipment needed to allow devices to communicate, and introduce the student to how data travels across the network.	0.50
10150114C02	Networking 1B This course will investigate how devices access a network to include the topologies that they use and the network media required to access the network. You will also understand how Ethernet works, what the function is of switches on the network and how the ARP process works to ensure communications on the network.	0.50
10150114C03	Networking 1C This course will explore the Cisco IOS and basic commands, it will look in depth at the network layer of the OSI model and the protocols that reside there. The student will learn initial router and switch commands for configuring interfaces, the boot process of the IOS and the routing process for routers for internetwork communication.	0.50
10150114C04	Networking 1D This course take an in depth look at IP addressing on the Network using both classful and classless (VLSM) addressing Schemes. It explores both IPv4 and IPv6 address schemes.	0.75
10150114C05	Networking 1E This course will explore the Transport, Session, Presentation and Application layers of the OSI model and the protocols that reside at each layer.	0.25
10150114C06	Networking 1F This course will explore network design, Basic Network Security, Network testing and verification tools, and Network troubleshooting tools and techniques.	0.50
1015211500	Database Fundamentals	3.00

COURSE #	COURSE TITLE	CREDITS
	Students learn the fundamental concepts and applications of relational database tables using a hands-on approach. Topics include database architectures, data structures, planning, creation, inquiry, updating, input and output forms (reporting), and importation of data from an outside source for use in databases.	
	Competencies	
10152115C01	Database Fundamentals A This course explores relational database concepts including nomenclature, keys, functional dependencies, and normalization.	1.00
10152115C02	Database Fundamentals B This course examines database security concepts including user roles, backup and recovery, encryption, and concurrency.	0.50
10152115C03	Database Fundamentals C This course explores the creation of use case, class, and entity relationship diagrams.	1.00
10152115C04	Database Fundamentals D This course explores the creation of database based on a scenario, including development of a scenario, database requirements, and summary report.	0.25
10152115C05	Database Fundamentals E This course explores an administrator's role and responsibilities relating to a database, including the creation of a report and a relational database examining the role of a database administrator.	0.25
1015212000	Introduction to Programming Introduces the learner to programming concepts using structured logic and basic concepts related to computer programming and program development. Programs will be developed using sequential, selection, and looping control structures, functions, arithmetic calculations.	3.00
	Competencies	
10152120C01	Introduction to Programming A Students learn how to develop a basic Visual Basic Program.	1.50
10152120C02	Introduction to Programming B Students learn how to develop a basic Java Program	1.50
1015212500	Database Design and Implementation Students learn to develop webpages that access and manipulate databases that they have created. Prerequisites: 1015211500 Database Fundamentals (C or better) and 1015212000 Introduction to Programming (C or better) and 1015417700 Web Programming Fundamentals (C or better).	4.00
	Competencies	

COURSE #	COURSE TITLE	Database Design and Implementation A	CREDITS 0.50
		Students learn programming structures such as if statements and loops in PHP Prerequisites: 10152120C02 Introduction to Programming B (B or better) and 10154177C04 Web Programming Fundamentals D (B or better) and 10152115C05 Database Fundamentals E (B or better).	
10152125C02	Database Design and Implementation B	Students learn to implement flat file functionality in PHP Prerequisites: 10152120C02 Introduction to Programming B (B or better) and 10154177C04 Web Programming Fundamentals D (B or better) and 10152115c05 Database Fundamentals E (B or better).	0.25
10152125C03	Database Design and Implementation C	Students learn to implement arrays in PHP Prerequisites: 10152120c02 Introduction to Programming B (B or better) and 10154177C04 Web Programming Fundamentals D (B or better) and 10152115C05 Database Fundamentals E (B or better).	0.25
10152125C04	Database Design and Implementation D	Students learn to implement string functions in PHP Prerequisites: 10152120c02 Introduction to Programming B (B or better) and 10154177C04 Web Programming Fundamentals D (B or better) and 10152115C05 Database Fundamentals E (B or better).	0.25
10152125C05	Database Design and Implementation E	Students learn to implement methods in PHP Prerequisites: 10152120c02 Introduction to Programming B (B or better) and 10154177C04 Web Programming Fundamentals D (B or better) and 10152115C05 Database Fundamentals E (B or better).	0.25
10152125C06	Database Design and Implementation F	Students learn to implement objects in PHP Prerequisites: 10152120C02 Introduction to Programming B (B or better) and 10154177C04 Web Programming Fundamentals D (B or better) and 10152115C05 Database Fundamentals E (B or better).	0.50
10152125C07	Database Design and Implementation G	Students learn to implement exceptions in PHP Prerequisites: 10152120c02 Introduction to Programming B (B or better) and 10154177c04 Web Programming Fundamentals D (B or better) and 10152115c05 Database Fundamentals E (B or better).	0.50
10152125C08	Database Design and Implementation H	Students learn to implement database functionality in MySQL Prerequisites: 10152120c02 Introduction to Programming B (B or better) and 10154177c04 Web Programming Fundamentals D (B or better) and 10152115c05 Database Fundamentals E (B or better).	0.25
10152125C09	Database Design and Implementation I	Students develop a capstone PHP Program Prerequisites: 10152120C02 Introduction to Programming B (B or better) and 10154177C04 Web Programming Fundamentals D (B or better) and 10152115C05 Database Fundamentals E (B or better).	1.25

COURSE #	COURSE TITLE	CREDITS
	Combines the emerging development technologies and environments, such as virtual reality and simulation, for students to gain exposure to and experience with them. Prerequisite: 1015212000 Introduction to Programming (C or better).	
	Competencies	
10152140C01	Emerging Software Technology A Students follow examples create applications with the emerging technology Prerequisite: 10152120C02 Introduction to Programming B (B or better).	1.50
10152140C02	Emerging Software Technology B Students create a custom application using the emerging technology Prerequisite: 10152120C02 Introduction to Programming B (B or better).	1.50
1015214600	Programming 2 Further develops concepts introduced in Introduction to Programming and explores more advanced topics such as methods, classes and arrays. Prerequisite: 1015212000 Introduction to Programming (C or better).	3.00
	Competencies	
10152146C01	Programming 2A Students learn to implement methods in Java Prerequisite: 10152120C02 Introduction to Programming B (B or better).	0.75
10152146C02	Programming 2B Students learn to implement arrays in Java Prerequisite: 10152120C02 Introduction to Programming B (B or better).	0.75
10152146C03	Programming 2C Students learn to implement objects in Java Prerequisite: 10152120C02 Introduction to Programming B (B or better).	0.75
10152146C04	Programming 2D Students combine methods, arrays, and objects into a Java Program Prerequisite: 10152120C02 Introduction to Programming B (B or better).	0.75
1015215500	e Portfolio Administration	3.00

COURSE #	COURSE TITLE	CREDITS
	<p>Students will design and create an e-portfolio. This portfolio will contain information about personal achievements in the field of Information Technology as well as sample offerings of the work completed as part of their coursework while attending Nicolet College. The e-portfolio will take the form of a personal/professional website that will be implemented on a web server for review. Prerequisites: 1015218300 Interactive Web Programming (C or better) (concurrent enrollment allowed) and 1015216000 Programming 3 (C or better) (concurrent enrollment allowed) and 1015212500 Database Design and Implementation (C or better) (concurrent enrollment allowed).</p> <p>Competencies</p>	
	<p>10152155C01 ePortfolio</p> <p>Students develop a website to communicate their professional persona Prerequisites: 10152160C05 Programming 3E (B or better) (concurrent enrollment allowed) and 10152125C09 Database Design and Implementation I (B or better) (concurrent enrollment allowed) and 10152183C06 Interactive Web Programming F (B or better) (concurrent enrollment allowed).</p>	3.00
1015216000	<p>Programming 3</p> <p>Further develops concepts introduced in Programming 2 and explores more advanced topics such as Graphical User Interfaces and databases. Prerequisite: 1015214600 Programming 2 (C or better).</p> <p>Competencies</p>	3.00
	<p>10152160C01 Programming 3A</p> <p>Students learn to implement inheritance in Java Prerequisite: 10152146C04 Programming 2D (B or better).</p>	0.50
	<p>10152160C02 Programming 3B</p> <p>Students learn to implement exceptions in Java Prerequisite: 10152146C04 Programming 2D (B or better).</p>	0.50
	<p>10152160C03 Programming 3C</p> <p>Students learn to implement GUIs in Java Prerequisite: 10152146C04 Programming 2D (B or better).</p>	0.50
	<p>10152160C04 Programming 3D</p> <p>Students learn to implement a database in Java Prerequisite: 10152146C04 Programming 2D (B or better).</p>	0.50
	<p>10152160C05 Programming 3E</p> <p>Students combine inheritance, exceptions, gui, and a database into a Java Program Prerequisite: 10152146C04 Programming 2D (B or better).</p>	1.00
1015218300	Interactive Web Programming	3.00

COURSE #	COURSE TITLE	CREDITS
	Students learn to create interactive webpages that respond to user input. Prerequisites: 1015212000 Introduction to Programming (C or better) and 1015417700 Web Programming Fundamentals (C or better).	
	Competencies	
10152183C01	Interactive Web Programming A Students learn programming structures such as if statements and loops in JavaScript Prerequisites: 10152120C02 Introduction to Programming B (B or better) and 10154177C04 Web Programming Fundamentals D (B or better).	0.50
10152183C02	Interactive Web Programming B Students learn to implement methods in JavaScript Prerequisites: 10152120C02 Introduction to Programming B (B or better) and 10154177C04 Web Programming Fundamentals D (B or better).	0.50
10152183C03	Interactive Web Programming C Students learn to implement arrays in JavaScript Prerequisites: 10152120C02 Introduction to Programming B (B or better) and 10154177C04 Web Programming Fundamentals D (B or better).	0.50
10152183C04	Interactive Web Programming D Students learn to implement objects in JavaScript Prerequisites: 10152120C02 Introduction to Programming B (B or better) and 10154177C04 Web Programming Fundamentals D (B or better).	0.50
10152183C05	Interactive Web Programming E Students learn to implement DOM Functionality in JavaScript Prerequisites: 10152120C02 Introduction to Programming B (B or better) and 10154177C04 Web Programming Fundamentals D (B or better).	0.50
10152183C06	Interactive Web Programming F Students develop a capstone JavaScript Program Prerequisites: 10152120C02 Introduction to Programming B (B or better) and 10154177C04 Web Programming Fundamentals D (B or better).	0.50
1015414000	PC Maintenance and Troubleshooting	3.00

COURSE #	COURSE TITLE	CREDITS
	Students will maintain and troubleshoot PC hardware and peripherals, as well as configure and upgrade PC components and modules. Students will also learn to maintain and troubleshoot PC operating systems.	
	Competencies	
10154140C01	PC Maintenance and Troubleshooting A This course will explore various hardware and firmware components and configurations of a personal computer resulting in the selection of components, assembly, and booting of a computer.	1.00
10154140C02	PC Maintenance and Troubleshooting B This course will examine modern network operating systems and explore their installation, configuration, troubleshooting, and preventive maintenance techniques.	0.50
10154140C03	PC Maintenance and Troubleshooting C This course will examine basic networking principles, standards, concepts, and technologies and explore applied networking concepts and technologies.	0.50
10154140C04	PC Maintenance and Troubleshooting D This course will examine laptop and mobile device component installation and configuration, preventative maintenance techniques, operating systems, security, connectivity, and e-mail.	0.25
10154140C05	PC Maintenance and Troubleshooting E This course will examine printer features, types, installation, configuration, sharing, maintenance, and troubleshooting.	0.25
10154140C06	PC Maintenance and Troubleshooting F This course will examine security treats and procedures, preventative maintenance techniques, and a basic security troubleshooting process.	0.25
10154140C07	PC Maintenance and Troubleshooting G This course will examine communication skills in the IT profession, ethical and legal issues in the IT industry, and troubleshooting in IT.	0.25
1015416500	Project Management	3.00

COURSE #	COURSE TITLE	CREDITS
	<p>The student will learn the tools and techniques of project management. The student will become familiar with the five process groups of project management and will gain experience in applying the nine knowledge areas of project management.</p> <p>Competencies</p>	
	<p>10154165C01 Project Management</p> <p>This course will examine project management principles and practices, including project initiation, project team roles and responsibilities, the Work Breakdown Structure (WBS), project schedule creation, resource planning and management, project budget and risk plan definition, project communications, change request processing and procurement documents, and project tools and documentation.</p>	3.00
1015417700	<p>Web Programming Fundamentals</p> <p>Introduces the learner to the principles of web page development. In this course the students will learn to develop static web pages that contain text, images, and videos. Students will also link multiple web pages to produce a complete website.</p> <p>Competencies</p>	3.00
	<p>10154177C01 Web Programming Fundamentals A</p> <p>This course explores designing a basic, static webpage with common HTML elements.</p>	0.50
	<p>10154177C02 Web Programming Fundamentals B</p> <p>This course explores designing webpages that link to other webpages.</p>	0.50
	<p>10154177C03 Web Programming Fundamentals C</p> <p>This course explores applying aesthetic elements to a webpage using cascading style sheets.</p>	0.50
	<p>10154177C04 Web Programming Fundamentals D</p> <p>Students develop a custom website based on the skills they have attained by completing the prior competencies.</p>	1.50
1080119500	Written Communication	3.00

COURSE #	COURSE TITLE	CREDITS
	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments is designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.	
	Competencies	
10801195C00	Written Communication Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments is designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.	3.00
2080121900	English Composition I Develops expository writing and critical thinking skills, including clarity, concision, concreteness, and completeness of expression, supported by reasoning, organization, and language conventions.	3.00
1080119600	Oral Interpersonal Communication Focuses upon developing speaking, verbal and nonverbal communications, and listening skills through individual presentations, groups activities, and other projects.	3.00
	Competencies	
10801196C00	Oral Interpersonal Communication Focuses upon developing speaking, verbal and nonverbal communications, and listening skills through individual presentations, groups activities, and other projects.	3.00
2081020100	Fundamentals of Speech Examines theory and process of communication, the role of speech in self-development, the art of persuasion, topic selection, the use of research-based evidence, and audience analysis. Includes organizing speech content, speech delivery, and critique via presentation of informative and persuasive speeches and development of effective extemporaneous speaking style. Students gain self-confidence, proficiency, and poise.	3.00
1080119700	Technical Reporting	3.00

COURSE #	COURSE TITLE	CREDITS
	Teaches preparation and presentation of written, oral, and multi-media technical reports. Prerequisite: 1080119500 Written Communication (C or better) or 2080121900 English Composition I (C or better).	
	Competencies	
10801197C00	Technical Reporting Teaches preparation and presentation of written, oral, and multi-media technical reports. Prerequisite: 10801195C00 Written Communication (C or better).	3.00
2080122300	English Composition II Advances composition skills, emphasizing well-reasoned argumentative research papers. Prerequisite: 2080121900 English Composition I (D- or better) or 1080119500 Written Communication (B or better).	3.00
1080413400	Mathematical Reasoning An activity based approach is used to explore numerical relationships, graphs, proportional relationships, algebraic reasoning, and problem solving using linear, exponential and other mathematical models. Students will develop conceptual and procedural tools that support the use of key mathematical concepts in a variety of contexts. This course is not designed for Science, Technology, Engineering, or Math (STEM) students and/or others who require calculus. Prerequisite: 7785478000 Principles of College Math (C or better) or Accuplacer Algebra score ≥ 35 or UW Math Placement Basic Math Skills score ≥ 250 or ACT Mathematics score ≥ 18 or Tailwind Math College Math Fund score ≥ 16 .	3.00
	Competencies	
10804134C00	Mathematical Reasoning An activity based approach is used to explore numerical relationships, graphs, proportional relationships, algebraic reasoning, and problem solving using linear, exponential and other mathematical models. Students will develop conceptual and procedural tools that support the use of key mathematical concepts in a variety of contexts. This course is not designed for Science, Technology, Engineering, or Math (STEM) students and/or others who require calculus. Prerequisite: 7785478000 Principles of College Math (C or better) or Accuplacer Algebra score ≥ 35 or UW Math Placement Basic Math Skills score ≥ 250 or ACT Mathematics score ≥ 18 or Tailwind Math College Math Fund score ≥ 16 .	3.00
2080422000	Intermediate Algebra Studies the construction and resulting properties of the real number system. Students simplify and factor algebraic expressions using fundamental laws and order of operations; solve first and second degree equations and inequalities in one variable, systems of equations, and exponential and logarithmic equations; graph first degree and second degree equations and inequalities in two variables; and solve equations involving rational expressions, fractional exponents and radicals. Prerequisites: 1083411000 Elem Algebra with Apps (C or better) or (UW Math Placement Basic Math Skills score ≥ 365 and UW Math Placement Algebra score ≥ 300) or 1080413400 Mathematical Reasoning (C or better) or ACT Mathematics score ≥ 20 or Tailwind Math College Math Fund score ≥ 47 .	4.00
1080919500	Economics	3.00

COURSE #	COURSE TITLE	CREDITS
	<p>With a focus on contemporary issues, this introductory course covers cost-benefit analysis, economics systems of the world, globalization, supply and demand, market structures, the labor market, economic growth, unemployment, inflation, business cycles, money, and government economic policy. The course strives to help students improve their individual and household decision-making, understand business decision-making, comprehend the current national and international economic issues and policies, and critically evaluate government response to economic concerns.</p>	
	Competencies	
10809195C00	Economics	3.00
	<p>This course is designed to give an overview of how a market-oriented economic system operates, and it surveys the factors which influence national economic policy. Basic concepts and analyses are illustrated by reference to a variety of contemporary problems and public policy issues. Concepts include scarcity, resources, alternative economic system, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.</p>	
2080928700	Principles of Macroeconomics	3.00
	<p>This beginning course focuses on the economy as a whole and how it affects individuals and businesses. With an emphasis on contemporary issues, the course covers the essentials of the market system, alternative economic systems, macroeconomic indicators including GDP, employment, and inflation, business cycles, the money and banking system, fiscal and monetary policy, international trade, and the economic issues of developing nations. The goal of the course is to help students understand current national and international economic issues and the impacts of government economic policies both within our own nation and abroad.</p>	
2080929100	Principles of Microeconomics	3.00
	<p>This beginning course analyzes individual and business decision making as well as government policy effects on businesses and individuals. The course covers supply, demand, elasticity, consumer behavior, business costs of production, market structures, labor and other resource markets, and international trade effects on businesses and individuals. The goal of the course is to help students improve individual decision-making, understand the behavior of consumers, the basics of business decision-making, and the impact of government intervention in the market.</p>	
1080919900	Psychology of Human Relations	3.00

COURSE #	COURSE TITLE	CREDITS
	Focuses on improving personal and job-related relationships through understanding and applying sound psychological principles. Topics include self-concept, motivation, emotions, stress management, conflict resolution, and human relation processes.	
Competencies		
10809199C00	Psychology of Human Relations Focuses on improving personal and job-related relationships through understanding and applying sound psychological principles. Topics include self-concept, motivation, emotions, stress management, conflict resolution, and human relation processes.	3.00
2080925100	Introduction to Psychology Surveys the methods, principles, and theories of psychology as they are applied to understanding, predicting, and modifying human behavior. Essential theoretical perspectives, including cognitive, humanistic, socio-cultural, psychodynamic, learning, and biological/evolutionary inform an understanding of key topics in psychology, among which may include the brain and behavior, development, emotion, memory, motivation, personality, psychological disorders, sensation and perception, thinking, and intelligence. Upon completion, students will be well prepared for more advanced study in the field of contemporary psychology.	3.00
1089010300	Professional Career Management Students develop an individualized, results-oriented job search strategy and research less well-known employment sources to access the "hidden job market." Emphasis is on creating personalized career search documents that get noticed, interviewing effectively in a variety of situations, and projecting a professional image-during both the job search and the first days and weeks on the new job.	1.00
Competencies		
10890103C01	Professional Career Management Students will develop a job search strategy that is results oriented by accessing the "hidden" job market, creating personalized career search documents that get noticed, interviewing effectively in a variety of situations, and projecting a professional image during both the job search and at a new job.	1.00

Total Credits:

61.00

Talk with an Academic Advisor about the program outline. Together, you will determine if credits you've already earned satisfy any requirements, discuss possible alternative courses, and choose the best classes if you're thinking of transferring.

AT A GLANCE

How You'll Learn



ONLINE MULTIPLE START DATES FLEXIBLE PACE

2021 Start Dates

January 6

May 7

September 1

February 1	June 7	October 4
March 1	July 5	November 1

2022 Start Dates

January 5	March 1	June 6
February 7	May 2	July 11

[VIEW FULL ACADEMIC CALENDAR](#)

What is Competency-Based Education?

Competency-Based Education (CBE) is learning at your own pace by mastering competencies through demonstration. Once all competencies for a program have been assessed and mastered, students will earn a certificate, diploma, or degree.

[LEARN MORE ABOUT CBE](#)

Approximate Cost

\$9,202*

Financial Aid Eligible

*Based on 10-level courses—materials, books, and fees may be additional

What You'll Learn

- Plan web-based solutions
- Design web application
- Build front-end of web-based software applications
- Build back-end of web-based software applications
- Integrate database technologies
- Develop technical documentation for web applications
- Test web application

Your Potential Careers

- Web Programmer
- Web Analyst
- Web Developer
- Web Designer

Median Annual Salary

\$38,209	\$48,945	\$64,557
Local	State	National

Get Started

Your application can be submitted online, it takes just a few minutes to complete.

[APPLY NOW](#)