



Information Technology (IT)— Web and Software Developer

Program No: 10-152-7

Associate Degree in Applied Science • Degree Completion Time: Four Terms
In general, an academic year consists of two terms; however, degree completion time may vary based on student scheduling needs and class availability.

2012-2013

Catalog No.	Class Title	Credit(s)
Term 1		
10105124	Portfolio Introduction	1.00
10152111	Emerging Web Trends	1.00
10152196	Web Development 1	3.00
10152186	Programming Introduction	3.00
10152116	Database Concepts	3.00
10804133	Math & Logic	3.00
10801195	Written Communication	3.00
	Total	17.00
Term 2		
10152107	Game Development	3.00
10152136	Systems Analysis	3.00
10152185	Web Development 2	3.00
10201106	CSS for Advanced Web Design	3.00
10809195	Economics	3.00
	Total	15.00
Term 3		
10152108	Mobile Device Development 1	2.00
10152187	Web Development 3	4.00
10152106	Integrated Web Concepts	4.00
10809112	Principles of Sustainability	3.00
10809196	Intro to Sociology	3.00
10105128	Career Exploration	2.00
	Total	18.00
Term 4		
10152112	Web Development 4	4.00
10152114	Mobile Device Development 2	3.00
10152117	Introduction to Flash	3.00
10152115	Internship - Web and Software Developer	1.00
10152119	Portfolio Assessment-Web and Software Dev	1.00
10801196	Oral/Interpersonal Communication	3.00
10809198	Intro to Psychology	3.00
	Total	18.00
	Program Total	68.00
Note:	Program start dates vary; check with your counselor for details.	
	Curriculum and program acceptance requirements are subject to change.	
	Classes run year-round; check with your program counselor for details.	

About the Program

The program curriculum focuses on:

- Using game and simulation development to help students learn programming principles
- Web application development
- Integration of web marketing and website design
- Database administration
- Mobile device development
- Freelance and contract employment

About the Career

The World Wide Web – it's an intriguing, dynamic, and growing entity that is currently home to over 110 million Web sites. Expanding integration of Internet technologies into businesses has resulted in a growing need for specialists who can develop and support Internet and intranet applications. The growth of electronic commerce means that more establishments use the Internet to conduct their business online. The increasing use of the Internet, the proliferation of Web sites, and the explosion of mobile technology have created a demand for a wide variety of new products. As individuals and businesses rely more on computers and wireless networks, it will be necessary to integrate current computer systems with this new, more mobile technology. These expanding Internet technologies have spurred demand for software developers who can develop World Wide Web applications.

Web and Software Developers get to work in dynamic settings, are at times able to work from home, and are part of a cutting-edge movement in technology that will transform how the world gets things done. Have a direct link to the future by creating the future as a Web and Software Developer.

Careers

- Front-end Web Developer
- Web Applications Developer
- Mobile Device Developer
- Database Administrator
- Programmer/Analyst
- Internet Applications Developer

Admissions Steps

- Application
- Application Fee
- Entrance Assessment Scores
- Transcripts
- Program Advising Session

Program Outcomes

- Develop, build, and configure a dynamic and interactive Web site or application.
- Design, model, and implement a database for Web site or application use.
- Demonstrate proficiency in basic Web server maintenance, including configuration, troubleshooting, and maintenance.
- Lead a team or project using basic principles of project management.
- Create basic computer games and computer simulations.
- Convert logic concepts into object oriented programming code.
- Communicate and work effectively in a team environment.

- Communicate information effectively and accurately in systems-related documentation.
- Manage version control, change control, quality assurance testing, user acceptance policies, system deployment, and system maintenance.
- Analyze and define the specifications of a system based on user requirements.
- Demonstrate an understanding of business models and organizational functions necessary to conduct business in a changing environment.
- Implement secure coding practices to ensure secure and safe Web sites
- Explore and employ new Web technologies and tools.
- Ensure Web applications comply with W3C validation standards and Section 508 Accessibility standards.
- Explore the relationship between web design, web development, and web marketing.

Other Program Expectations

- Students must purchase a 250GB external hard drive.
- Minimum home computer system/laptop requirements include a 2 Ghz processor, 4 GB of RAM, and a 250 GB hard drive.
- Students are encouraged to purchase student version of Adobe Creative Suite.
- Students' home PCs must have a web cam.
- Students are strongly encouraged to take Written Communications (801-195) during the summer before program start.
- Students are strongly encouraged to take General Education courses during summer break, allowing concentrated time during semesters for core program courses.

Approximate Costs

- \$126 per credit (resident)
- \$182 per credit (out-of-state resident)
- Other fees vary by program (books, supplies, materials, tools, uniforms, health-related exams, etc.)

Functional Abilities

Functional abilities are the basic duties that a student must be able to perform with or without reasonable accommodations. At the postsecondary level, students must meet these requirements, and they cannot be modified.

Entrance Assessment Scores

Accuplacer	ACT
Arithmetic - 79	Mathematics - 18
Reading - 74	Reading - 18
Sentence Skills - 86	English - 18

Transfer agreements are available with the following institutions:

Capella University
Concordia University
Franklin University
Herzing University
MSOE Rader School of Business
Ottawa University

Silver Lake College
University of Phoenix
Upper Iowa University
UW-Green Bay
UW-Stout

IMPORTANT: For more information on these agreements, visit gotoltc.edu/transfer.

10105124 Portfolio Introduction

...prepares the student to develop a personal and professional portfolio, to identify self-awareness through various self-assessments and apply these results to the workplace and other environments, to write goal statements and understand their value, to develop an individual history of events and achievements, and to identify significant learning experiences throughout the student's life.

10105128 Career Exploration

...prepares the student to develop a career plan, write a resume, create a cover letter, prepare for an interview, search for work on the Internet, adapt a resume for an electronic scan, and post a resume and cover letter on the Internet.

PREREQUISITE: 10105124 Portfolio Introduction

10152106 Integrated Web Concepts

...introduces the student to the three major components of the Web -- design, development, and marketing. A common course among Graphic and Web Design, Web and Software Developer, and Marketing, students from each program will be responsible for working in teams and to coordinate projects and present their industry to students from the other programs.

PREREQUISITE: 10104102 Prin of Marketing and
COREQUISITES: 10152187 Web Development 3 and
10201106 CSS for Adv Web Design and CONDITION:
101527 Web and Software Developer or 102012 Graphic and
Web Design or 101043 Marketing program requirements met

10152107 Game Development

...introduces the learner to gaming concepts including chase games, imaging, audio, sprite graphics and tile games. This course explores 2D graphics with DirectX, the C# language and the XNA Game Development Studio. Programming concepts are taught using game creation on personal computers and the Xbox 360. It introduces the concept of 3D graphics programming.

PREREQUISITE: 10152186 Programming Introduction

10152108 Mobile Device Development 1

...introduces the student to programming simple iPhone applications. Students will learn basic Objective C concepts, iPhone programming basics, and use the SDK environment as a development platform. Design concepts and programming tools will be integrated with an emphasis on developing and deploying iPhone applications.

PREREQUISITE: 10152186 Programming Introduction

10152111 Emerging Web Trends

...introduces students to the most current developments in the Web. Using resources and tools for staying current in relation to new technologies and trends related to Web design, development and marketing, students will assess current Web trends as they apply to their chosen profession.

10152112 Web Development 4

...introduces the learner to Microsoft's .NET platform. .NET frameworks, content-managed Web sites, and Web server architecture. Students will develop interactive and dynamic web applications using the Microsoft ASP.NET Web application framework and ADO.NET components to access data and data services through the creation of data-driven ASP.NET web pages, configuration of an ASP.NET application, the deployment of an ASP.NET application and the creation of XML web services. Microsoft SQL Server is used.

PREREQUISITE: 1015287 Web Development 3

10152114 Mobile Device Development 2

...introduces the student to designing and building mobile applications using Google's Android open-source platform. The course explains what Android is and how it compares to other mobile environments, the setup of the Android, Eclipse-based development tools, the Android SDK, all essential features, as well as the advanced capabilities and APIs such as background services, accelerometers, graphics, and GPS.

PREREQUISITE: 10152108 Mobile Device Development 1

10152115 Internship-Web and Software Developer

...requires students to complete 72 hours of performing work in a service/industrial service setting related to their program objectives. Students are responsible for seeking and obtaining the internship workstation position. Course requirements including maintaining a log of work activities, identifying and receiving approval from the job supervisor and instructor, completing a work-related project, and an assessment of the student's portfolio. Students meet periodically at LTC.

PREREQUISITE: 10152187 Web Development 3 and
10152106 Integrated Web Concepts and CONDITION:
101527 Web and Software Developer program requirements met

10152116 Database Concepts

...prepares the learner to differentiate among the primary DBMS components; determine the difference in data models; use Query By Example and relational algebra; develop SQL statements; apply principles of database integrity, security and normalization; reconstruct poorly designed table structures; develop a relational database design using data requirement analysis and specification methods; and examine additional DBMS functions.

10152117 Introduction to Flash

...provides an exploration of the use of Flash technology to create animations of web sites. Students will use technology to draw, create and manipulate/import vector objects. They will make the object "come to life" in frame-by-frame animations.

PREREQUISITE: 10152196 Website Development 1

10152119 Portfolio Assessment - Web and Software Developer

...assesses what the student has learned through the Web and Software Developer degree. The course will focus on the continued development of their electronic career portfolio, the freelance/contract Web market, and the analysis of the achievement of their core abilities and program outcomes.

PREREQUISITES: 10105124 Portfolio Introduction and
10105128 Career Exploration and 10152187 Web
Development 3 and 10152106 Integrated Web Concepts and
CONDITION: 101527 Web and Software Developer
admissions requirements met

10152136 Systems Analysis

...introduces the student to the principles of systems analysis, including the phases for the life cycle of analysis, preparation of data gathering instruments, interviews, user interaction and the use of UML *Unified Modeling Language) to develop analysis documentation. Students work as part of a team to develop the analysis of a system.

PREREQUISITES: 10152186 Programming Introduction

10152185 Web Development 2

...introduces the student to DHTML, JavaScript, AJAX, and framework libraries. Students learn how to add JavaScript and AJAX to existing programs, and design new applications to exploit the power of Web 2.0. Students learn the three layers of AJAX framework, and when (and how) to use each. Students learn how to create rich clients, use visual effects, add client-side validation, and handle forms.

PREREQUISITE: 10152196 Web Development 1 and
10152186 Programming Introduction

10152186 Programming Introduction

...introduces the students to fundamental Object-oriented Programming (OOP) concepts: classes, objects, methods, properties, event handling, control logic, data structures, algorithms, concurrency and problem solving, with minimal exposure to language semantics a unique drag-and-drop, graphical environment is provided, which results in mistake-free code generation. Learners hone problem solving skills while exploring concepts visually, and then seeing how these concepts translate to code.

10152187 Web Development 3

...introduces the learner to PHP, MySQL, PHP frameworks, content-managed Web sites, and Web server architecture. Topics covered include an introduction to the Apache Web server, server-side scripting, PHP control logic and functions, controlling state using sessions and cookies, querying database content and population to an HTML Web page, MySQL relational database administration, and processing form information and populating it to a MySQL database.

PREREQUISITE: 10152186 Programming Introduction

10152196 Web Development 1

...introduces the students to Adobe Dreamweaver, XHTML and web page principles beginning with building simple web pages using graphics and continuing on to build web pages with greater layout control by using table design and forms. In addition, they will have hands-on experience using Cascading Style Sheets (CSS) as an important component of dynamic HTML pages; and hands-on experience using in-line, embedded and external style sheets to create dynamic pages that allow for more control over the attributes of a web page.

10201106 CSS for Advanced Web Design

...further explores the range of design methods made possible by Cascading Style Sheets (CSS) and how it can be used for creating progressive and contemporary Website designs. The course will cover imagery, typography, effects, and themes as they relate to CSS and Website design.

PREREQUISITE: 10152196 Web Development 1

10801195 Written Communication

...teaches the writing process, which includes prewriting, drafting, revising, and editing. Through a variety of writing assignments, the student will analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Keyboarding skills are required for this course. It also develops critical reading and thinking skills through the analysis of a variety of written documents.

PREREQUISITE: 10831103 Intro to College Wrtg or
CONDITION: Written Comm Prepared Learner (Accuplacer
Wrtg min score of 86 or Equivalent) and COREQUISITE:
10838105 Intro Rdg & Study Skills or CONDITION: Reading
Accuplacer min score of 74 or equivalent

10801196 Oral/Interpersonal Comm

...provides students with the skills to develop speaking, verbal and nonverbal communication, and listening skills through individual speeches, group activities, and other projects.

COREQUISITE: 10838105 Intro Reading and Study Skills or
CONDITION: Reading accuplacer minimum score of 74 or
equivalent

10804133 Math & Logic

...will apply mathematical problem solving techniques. Topics will include symbolic logic, sets, algebra, Boolean algebra, and number bases.

PREREQUISITE: Accuplacer Math minimum score of 79 or
Equivalent or 10834109 Pre-Algebra and COREQUISITE: 108
38105 Intro Reading and Study Skills or CONDITION:
Reading accuplacer minimum score of 74 or equivalent

10809112 Principles of Sustainability

...prepares the student to develop sustainable literacy, analyze interconnections among physical and biological sciences and environmental systems, summarize effects of sustainability on health and well-being, analyze connections among social, economic, and environmental systems, employ energy conservation strategies to reduce use of fossil fuels, investigate alternative energy options, evaluate options to current waste disposal/recycling in the U.S., and analyze approaches used by your community.

10809195 Economics

...provides the participant with 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 systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

COREQUISITE: 10838105 Intro Reading and Study Skills or
Accuplacer Reading score of 74 or equivalent

10809196 Introduction to Sociology

...introduces students to the basic concepts of sociology: culture, socialization, social stratification, multi-culturalism, and the five institutions, including family, government, economics, religion, and education. Other topics include demography, deviance, technology, environment, social issues, social change, social organization, and workplace issues.

COREQUISITE: 10838105 Intro Reading and Study Skills or
Accuplacer Reading score of 74 or equivalent

10809198 Intro to Psychology

...introduces students to a survey of the multiple aspects of human behavior. It involves a survey of the theoretical foundations of human functioning in such areas as learning, motivation, emotions, personality, deviance and pathology, physiological factors, and social influences. It directs the student to an insightful understanding of the complexities of human relationships in personal, social, and vocational settings.

COREQUISITE: 10838105 Intro Reading and Study Skills or
Accuplacer Reading score of 74 or equivalent