

Information Technology - Web Analyst/Programmer

10-152-4 Associate Degree

Financial Aid Eligible

Program Overview

Information technology provides the foundation for most modern businesses. Using information technology, programmer/analysts create business solutions by analyzing an organization's needs and working closely with individuals/teams to design and develop information solutions that fulfill strategic initiatives, improve efficiency, enhance customer service, and monitor institutional effectiveness.

WITC's Information Technology - Web Analyst/Programmer program includes training in a number of different programming languages and analysis practices. Students will become skilled with a variety of operating systems, database design and manipulation methods, and Web design and development techniques. Upon successful completion of this program, graduates will have the analysis techniques and programming skills necessary to organize data and solve problems within a variety of computing environments.

It takes more than technical skills to solve business needs. Experienced instructors will help students develop and implement information technology solutions and polish the professional and interpersonal skills they'll need to identify problems and communicate their proposed solution to individuals and teams. To help students gain key career skills, instructors use the latest technology and instructional techniques along with their own experience.

The Information Technology - Web Analyst/Programmer program offers students flexible course offerings, both on campus and online, to fit their life and learning style. The college continuously evolves program content based on recommendations from industry-based leaders, ensuring current expertise after graduation.

Campus:

New Richmond
Online



Special Feature

The Information Technology - Web Analyst/Programmer program is available online.

Student Profile

When students enter the Information Technology - Web Analyst/Programmer program, they should be able to:

- Organize their work
- Think logically
- Concentrate on details for long periods of time
- Enjoy work that requires a high degree of accuracy
- Work under stress
- Handle setbacks and remain at a task until a workable solution can be attained

Preparation for Admission

Students should strive to reach a comfort level in the following courses or skills:

- Basic computer skills including programming and concepts
- Keyboarding
- Algebra
- Consumer Math
- Microsoft Windows
- Internet browsers

Key to the student's success in this program is organization, logic, accuracy, and follow-through.

Program Outcomes

Employers will expect graduates of the program to be able to:

- Design computer applications for business environments
- Write computer programs utilizing multiple programming languages
- Apply debugging skills to program development
- Apply testing skills to program development
- Create effective program documentation
- Use critical-thinking skills for program design and development
- Use multiple resources to solve system problems

Collegewide outcomes and indicators will also be addressed to develop personal awareness, career effectiveness, and professionalism. See page 5 for a list of collegewide outcomes and indicators.

Career Outlook

Businesses are experiencing growth in Web-based environments such as intranets, extranets, and Internet applications. Organizations will look for programmers who can support existing enterprise systems and implement electronic commerce strategies. The demand for programmers with object-oriented programming skills, technical specialization in multimedia technology, and graphic user interface (GUI) development will continue to grow. Typical positions available after graduation include:

- Web Developer
- Programmer/Analyst
- Computer Programmer
- Database Administrator
- Web Master

Curriculum

Number	Course Title	Credits
Technical Studies Courses		
10152100	Database Concepts and SQL	3
10152101	Web Design and Development	3
10152102	Advanced Web Site Development ▲	3
10152103	Visual Basic - Beginning ▲	3
10152104	Visual Basic - Advanced ▲	3
10152105	Enterprise Visual Basic Programming ▲	3
10152106	Java Programming - Beginning ▲	3
10152107	Java Programming - Advanced ▲	3
10152108	Enterprise Java Programming ▲	3
10152109	Object-Oriented Design with UML	3
10152110	Programming in SQL ▲	3
10152111	Systems Analysis and Design ▲	3
10152112	Server-Side Web Development ▲	3
10152113	Applications Development ▲	3
10152116	Web Tools of the Trade ▲	2
10152135	Program Logic	2
10890105	Job Quest	<u>1</u>
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General Studies Courses[‡]

10801195	Written Communication ▲	3
10801196	Oral/Interpersonal Communication	3
10801197	Technical Reporting ▲	3
10804123	Math with Business Applications ▲	3
10809166	Introduction to Ethics: Theory and Application or	3
10809172	Race, Ethnic, and Diversity Studies	3
10809195	Economics	3
10809198	Introduction to Psychology	<u>3</u>
		21

PROGRAM REQUIREMENTS

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▲ Requires a prerequisite and/or corequisite that must be completed with a grade point of 2.0 or better.

‡ See page 40 for General Studies course descriptions.

Course Descriptions

(See page 40 for General Studies course descriptions)

10152100

Database Concepts and SQL - Credits: 3

This course is a comprehensive introduction to database concepts. The interaction between software applications and databases will be discussed. Database terminology will be introduced. Students will learn how to manage, design, and construct relational databases. Structured Query Language (SQL) will be used to define and access databases. Other topics include normalization, entity relationship diagrams, foreign key constraints, and indexes.

10152101

Web Design and Development - Credits: 3

In this course, students will learn to plan and develop well-designed Web sites that combine effective navigation and the balanced use of text, graphics, and color. Emphasis will be placed on understanding the basics of HTML syntax, how to use CSS, and how to make use of third party tools such as editors and Web 2.0 objects.

10152102

Advanced Web Site Development - Credits: 3

Provides the student with experience in the design and implementation of business Internet Web sites using advanced command syntax. Topics include JavaScript, Dynamic HTML, style sheets, and XML. PREREQUISITE: 10152101 Web Design and Development.

10152103

Visual Basic - Beginning - Credits: 3

Introduction to the concepts and techniques of programming in the Microsoft Windows environment using the Visual Basic language. Topics covered include requirement analysis, program design, coding, and debugging. Emphasis is placed on the techniques needed to program graphical user interface applications using Visual Basic forms, events, and codes. COREQUISITE: 10152135 Program Logic.

10152104

Visual Basic - Advanced - Credits: 3

This course provides the student with an object-oriented view of the Visual Basic development environment. Some of the topics covered include classes, instance, encapsulation, polymorphism, and inheritance. Emphasis is placed on using Visual Basic to write class libraries of reusable code, ActiveX components, ActiveX controls, and error-handling routines. PREREQUISITE: 10152103 Visual Basic - Beginning.

10152105

Enterprise Visual Basic Programming - Credits: 3

This course is designed to provide students with an enterprise view of the Visual Basic development environment. Concepts and competencies will be emphasized that help the programmer create Visual Basic programs that conform to well-adopted Windows Standards. Students will learn how to incorporate advanced visual basic tools to enhance windows functionality. Current platform features are introduced such as XML, LINQ, and Windows Presentation Foundation (WPF). Successful completion of this course will provide the student with a rich set of tools to create programs that satisfy the demands of today's business environment. PREREQUISITE: 10152104 Visual Basic - Advanced.

10152106

Java Programming - Beginning - Credits: 3

This is an introductory course in Java programming. The course will familiarize the student with the fundamentals of the Java language including data types, operators, expressions, and conditional statements. Students will learn how to set up an environment for developing Java programs, define classes and utilize class objects. Object-oriented topics including encapsulation, inheritance, and polymorphism will be explored. Other topics include Arrays, Exception Handling, and Packages. PREREQUISITE: 10152135 Program Logic.

10152107

Java Programming - Advanced - Credits: 3

This course will provide an in-depth look at how to apply some of the more advanced features of the Java language. It is intended for students with a solid grasp of Java language basics and object-oriented concepts. An integrated development environment for Java development will be utilized in the course. Students will create GUI applications and applets. Topics covered include Swing, utility classes, threads, database access, and Java Beans. PREREQUISITE: 10152106 Java Programming - Beginning.

10152108

Enterprise Java Programming - Credits: 3

The third class of the Java sequence explores advanced Java topics within the J2EE application framework. Topics include JDBC, Enterprise JavaBeans, servlets, JSPs, XML, JMS, JNDI, Web services, custom tag libraries, Web applications, and enterprise applications. PREREQUISITE: 10152107 Java Programming - Advanced.

10152109

Object-Oriented Design with UML - Credits: 3

This course provides practical, introductory-level systems analysis experience. Emphasis is on the design of physical system elements using the Unified Modeling Language. Design will include: data design, object-oriented design, user interface design, and system interface design. The use of CASE tools is integrated throughout the course to enhance the design experience.

10152110

Programming in SQL - Credits: 3

The course covers database design techniques, database manipulation techniques, and database integrity techniques using the SQL programming language. Students will also learn management tasks and security features implemented by server administrators. PREREQUISITE: 10152100 Database Concepts and SQL.

10152111

Systems Analysis and Design - Credits: 3

This course covers the introduction to principles and techniques for analyzing and designing information systems. Included will be the definition of the problem, fact gathering, evaluation of alternative solutions, designing of input and output files, report design, and managing a system project. PREREQUISITES: 10152100 Database Concepts and SQL.

10152112

Server-Side Web Development - Credits: 3

This course will familiarize the student with techniques to create server-side scripts for building fully functional Web applications. Topics covered include the use of scripting objects, database interaction, and session management. Students will learn the fundamental programming concepts to build an e-commerce solution such as an online shopping cart application. PREREQUISITES: 10152100 Database Concepts and SQL, and 10152101 Web Design and Development.

10152113

Applications Development - Credits: 3

The purpose of this course is to provide the student with experience developing applications in a business environment. Students will apply programming and analysis skills to develop a fully functional software application. The project will progress through all the stages of the development process including planning, analysis, design, construction, testing, and deployment. PREREQUISITES: 10152105 Enterprise Visual Basic Programming, 10152107 Java Programming - Advanced, and 10152111 Systems Analysis and Design.

10152116

Web Tools of the Trade - Credits: 2

In Web Tools of the Trade, you will explore ways to make use of third-party Web applications. Besides working with Web applications, you will also learn how to purchase your own domain name and configure it for use in e-mail and Web hosting. PREREQUISITE: 10152101 Web Design and Development.

10152135

Program Logic - Credits: 2

In Program Logic, students will learn how to develop a clear consistent strategy to solve problems. The student will analyze problems, review requirements, and then create a solution in pseudocode. With proper pseudocode, students can focus on understanding the logic of the solution and not be limited to the syntax of a specific language. Students will also learn how to properly use decision and repetition structures, functions, subroutines, modules, arrays, and how to use variables and understand variable scope.

10890105

Job Quest - Credits: 1

This course is designed to enhance the student's ability to seek, obtain, and retain employment. Assessment of personal characteristics, job-seeking and retention skills, preparation of employment-related documents, and interviewing strategies are included.

Graduate Employment Information

(WITC Graduate Survey Responses 2008-2009; for most recent data, go to witic.edu)

Number of graduates	6	Number employed	3	% employed in WITC district	0%
Number of responses	6	Percent employed	50%	Range of yearly salary	-*
Number available for employment	6	Employed in related field	2	Average yearly salary	\$40,000*

*Average yearly salary based on composite of graduates from Wisconsin's 16 technical college districts (including WITC graduates). Range of yearly salary not available.