

## 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 Web Analyst/Programmer program includes training in a number of different programming languages and analysis practices. You 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, you will have the analysis techniques and programming skills necessary to organize data and solve problems within a variety of computing environments.

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

WITC's Web Analyst/Programmer degree offers you flexible course offerings, both on campus and online, to fit your life and learning style. The college continuously evolves program content based on recommendations from industry-based leaders, ensuring current expertise after graduation.

Offered at:



**New Richmond**  
Also available  
online at  
[witic.edu](http://witic.edu)

## Special Feature

The IT - Web Analyst/Programmer program is available online.

## Student Profile

When you enter the IT - Web Analyst/Programmer program, you should be able to:

- Organize your 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

The following experiences will help you prepare for this program:

- Basic Computer Skills including Programming and Concepts
- Keyboarding
- Algebra
- Consumer Math
- Microsoft Windows
- Internet Browsers

Key to your success in this program is organization, logic, accuracy, and follow-through.

## Program Outcomes

Employers will expect you, as a graduate of the program, to be able to:

- Analyze and design computer applications for business environments.
- Write computer programs utilizing multiple programming languages.
- Apply testing, debugging, and troubleshooting skills.
- Create effective program documentation.
- Use effective written and oral communication skills techniques.
- Use critical thinking skills in analyzing, developing, and implementing systems and programs.
- Work cooperatively to share information, resolve conflict, and make decisions.

## 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 job titles available to you after graduation include:

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

## Curriculum

Number	Course Title	Credits
<b>Technical Studies Courses</b>		
10105115	Professional Profile	1
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
10152135	Program Logic	1
10890105	Job Quest	45
<b>General Studies Courses</b>		
10801195	Written Communication ♦	3
10801196	Oral/Interpersonal Communication	3
10801197	Technical Reporting ▲	3
10804113	College Technical Mathematics 1A	3
10809144	Macroeconomics	3
10809166	Introduction to Ethics: Theory and Application	3
10809198	Introduction to Psychology	3
		21
ELECTIVES		3
PROGRAM REQUIREMENTS		<b>69</b>

- ▲ This course requires a prerequisite and/or corequisite, and must be completed with a grade of "C-" or better.
- ♦ Appropriate placement score or Introduction to College Writing course required.

# Course Descriptions

## 10105115

### Professional Profile - Credits: 1

A course to strengthen the professional image. Students begin to develop self-awareness of elements affecting their personal and work relationships. Guidelines for determining appropriate grooming, dress, and poise will be covered. Personal life management along with career/life goal setting will be reinforced. This class should be taken in the last semester of the program.

## 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 the use of integrating client-side scripting into Web pages and building Web pages that integrate with server-side applications.

## 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. Existing Visual Basic tools are used and, in some cases, Windows libraries are used to extend the functionality of Visual Basic. 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

Practical, introductory-level systems analysis experience. Emphasis is on the design of physical system elements: 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

An advanced study of SQL Server 2000. 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 and 10801195 Written Communication.

## 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, 10152101 Web Design and Development, and 10152104 Visual Basic - Advanced.

## 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.

## 10152135

### Program Logic - Credits: 1

The purpose of this course is to help the student learn how to develop a method for solving problems, develop solutions to common business problems, and design structured computer programs. In doing this, the student will analyze problems or lists of requirements, then design program solutions. In class, students analyze normal everyday problems and define and solve them. Students will then move into common business-related programming problems. Students will learn not only how to design program solutions, but to analyze how you arrive at those solutions.

## 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 2005-2006)

Number of graduates	3	Number employed	2	% employed in WITC district	0%
Number of responses	3	Percent employed	100%	Range of yearly salary	-
Number available for employment	2	Employed in related field	1	Average yearly salary	\$32,059

*career vision*