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.

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

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<tr>
<th>Number</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>10105115</td>
<td>Professional Profile</td>
<td>1</td>
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<tr>
<td>10152100</td>
<td>Database Concepts and SQL</td>
<td>3</td>
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<tr>
<td>10152101</td>
<td>Web Design and Development</td>
<td>3</td>
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<tr>
<td>10152102</td>
<td>Advanced Web Site Development</td>
<td>3</td>
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<tr>
<td>10152103</td>
<td>Visual Basic - Beginning</td>
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<tr>
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<tr>
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<td>Java Programming - Advanced</td>
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<tr>
<td>10152108</td>
<td>Enterprise Java Programming</td>
<td>3</td>
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<tr>
<td>10152109</td>
<td>Object-Oriented Design with UML</td>
<td>3</td>
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<tr>
<td>10152110</td>
<td>Programming in SQL</td>
<td>3</td>
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<tr>
<td>10152111</td>
<td>Systems Analysis and Design</td>
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<td>10152112</td>
<td>Server-Side Web Development</td>
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<td>Applications Development</td>
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<td>10152135</td>
<td>Program Logic</td>
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<td>10890105</td>
<td>Job Quest</td>
<td>1</td>
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Financial Aid Eligible

Offered at:

New Richmond
Also available online at witc.edu

Program Requirements

- 45 Credits

Electives

- 3 Credits

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

1015115 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 manage-
ment 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
corcepts. 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 applica-
tions using Visual Basic forms, events, and codes. COREQUISITE:
10152105 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 Win-
9
dows 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 condi-
tional statements. Students will learn how to set up an environ-
ment 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: 10152105 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 top-
ics within the J2EE application framework. Topics include JDBC,
Enterprise JavaBeans, servlets, JSP, XML, IMS, JDDI, Web services,
custom tag libraries, Web applications, and enterprise applica-
tions. 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 data-
based design techniques, database manipulation techniques, and
database integrity techniques using the SQL programming lan-
guage. 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

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
ecommerce solution such as an online shopping cart applica-
tion. PREREQUISITES: 10152100 Database Concepts and SQL,
10152101 Web Design and Development, and 10152114 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)

<table>
<thead>
<tr>
<th>Number of graduates</th>
<th>Number employed</th>
<th>% employed in WITC district</th>
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<tr>
<td>3</td>
<td>2</td>
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<table>
<thead>
<tr>
<th>Number of responses</th>
<th>Percent employed</th>
<th>Range of yearly salary</th>
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<tbody>
<tr>
<td>3</td>
<td>100%</td>
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<table>
<thead>
<tr>
<th>Number available for employment</th>
<th>Employed in related field</th>
<th>Average yearly salary</th>
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</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>$32,059</td>
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Programs and Course Descriptions