



## PROGRAM OUTCOMES

Employers will expect you, as an IT-Programmer/Analyst graduate, to be able to:

- Design and write structured programs in current languages that execute in multi-platform environments
- Analyze and solve business problems using a structured problem solving process
- Perform professionally and effectively in team, individual and cross-cultural work settings
- Design and implement database systems
- Demonstrate knowledge of appropriate IT concepts and terminology when communicating with clients, co-workers, team members and management

### Program Code 10-152-1

**Expected Program Costs: \$10,300**

**Median Annual Salary: \$37,000**

## OVERVIEW

Today's technological world has made the computer a necessity and those who can operate and program them are very valuable employees. As an Information Technology-Programmer/Analyst student you will learn how computers are used for evaluating, reporting and analyzing critical data for day-to-day and long-range operations.

Training prepares you to design, program and maintain computer programs that run on desktop computers, midrange computers and the web. You will begin by learning basic programming concepts and problem solving techniques and then learn the skills necessary to create advanced business programming solutions.

The IT-Programmer/Analyst program is offered at the Stevens Point and Wisconsin Rapids campuses.

## CAREER OPTIONS

Application Engineer  
Applications Programmer  
Computer Programmer  
Internet Developer  
Microcomputer Operator  
PC Support Specialist  
Programmer/Analyst Assistant  
Software Technician  
Web Programmer

## POTENTIAL FOR ADVANCEMENT

Database Administrator  
Database Manager  
Information Systems Director  
Microcomputer Operations Manager  
Network Administrator  
Project Manager  
Senior Programmer  
Systems Analyst  
Systems Programmer  
Webmaster

*Potential advancement generally requires further education.*

## ADMISSIONS PROCEDURES

To apply to the IT-Programmer/Analyst program, please submit the following documents to the MSTC Admissions Office:

1. Complete an MSTC application form and return it with the \$30 non-refundable application fee.
2. Complete the Accuplacer or ACT test. Minimum scores required:
  - Reading-Accuplacer score of 55
  - Sentence Skills-Accuplacer score of 60
  - Math-Accuplacer score of 34
  - ACT equivalents for above scores are acceptable.If a student does not meet the required test scores, they may retest or complete an identified structured course(s) in the Academic Support Center.
  - Written Communication, courses in mathematics and some science courses have placement requirements. Please refer to the course description section in the back of the catalog, listed under General Education, for course specific information.
3. Submit an official copy of all academic transcripts, including high school, college or university and HSED/GED.

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**Mid-State Technical College  
Admissions  
500 32nd Street North  
Wisconsin Rapids, WI 54494**

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## PROGRAM COURSE DESCRIPTION

### 10102101 // 3 credits Intro to Business

An introduction to what a business is, how it operates, and how it is managed. Students will identify forms of ownership and the processes used in production and marketing, finance, personnel and management in business operations.

### 10102103 // 3 credits Business Law & Ethics

This course will introduce the student to basic ethical theories and value systems; students will apply these perspectives to moral issues, problems, situations which arise within the business environment. Emphasis will be placed on how the applicable laws are being interpreted.

### 10103106 // 3 credits Microsoft Office-Introduction

Develops introductory skills in the Microsoft Office Suite (Word, Excel, Access, PowerPoint, and Outlook) while reinforcing the students' knowledge of computer concepts, Windows Explorer and Internet usage through demonstrations and lab exercises. Students should possess basic keyboarding, mouse and Windows XP skills. Students may develop these skills in Academic Support Center computer training prior to enrolling or while concurrently enrolled in the Microsoft Office-Introduction course.

### 10105160 // 3 credits Business Law

Examines the classifications of law, elements of legal contracts, and business applications. Negotiable instruments, sales and bailment contracts, principal-agent relations, and real estate law are also explained. Ethical practices are emphasized rather than narrow, legal definitions.

### 10150101 // 3 credits Network Fundamentals

This CISCO Academy based course develops skill in PC hardware and software troubleshooting including installation of hardware components and problem determination and correction of malfunctioning hardware and software.

*Corequisite: Windows Operating Systems 10103102 or Microsoft Office-Introduction 10103106*

### 10150151 // 2 credits Implementing PC Security

The course will present personal computer security awareness concepts, principles, and implementation procedures. The value of securing personal and organizational data along with local, state and federal legislation pertaining to privacy will be discussed. Liability of individuals and institutions in maintaining data confidentiality and integrity will be reviewed. The concepts of risk management, security policies, common threats, and threat countermeasures will be introduced. Best practices in access control through password policies and other basic security measures will also be introduced.  
*Prerequisite: Windows Operating Systems 10103102, Microsoft Office-Introduction 10103106 or consent of instructor*

### 10152101 // 4 credits Programming Logic-Beginning

This course will introduce students to fundamental computer programming logic and terminology. Students utilize the concepts of structures, pseudocode, and modularization in solving problems. The students will then use these tools to program in a current programming language.  
*Corequisite: Windows Operating Systems 10103102 or Microsoft Office-Introduction 10103106*

## CURRICULUM

Term	(16 credits)
10102101 Intro to Business	3
10103106 Microsoft Office-Introduction	3
10150101 Network Fundamentals	3
10152101 Programming Logic-Beginning	4
10801195 Written Communication	3

Term	(18 credits)
10102103 Business Law & Ethics -or-	
10105160 Business Law	3
10150151 Implementing PC Security	2
10152102 Programming Logic-Intermediate	4
10152170 Systems Analysis	3
10801196 Oral/Interpersonal Communication -or-	
10801198 Speech	3
10804107 College Mathematics	3

Term	(18 credits)
10152110 COBOL-Beginning -or-	
10152115 RPG-Beginning	3
10152120 Introduction to the iSeries	1
10152150 Web Programming	3
10152171 Systems Design	3
10154101 IT Customer Support	2
10809144 Macroeconomics	3
10809122 Intro to American Government -or-	
10809172 Race, Ethnic & Diversity Studies -or-	
10809196 Intro to Sociology	3

Term	(15 credits)
10809143 Macroeconomics	3
10809188 Developmental Psychology -or-	
10809198 Intro to Psychology	3
10152111 COBOL-Intermediate -or-	
10152116 RPG-Intermediate	3
10152155 Web Data Management	3
10152172 Systems Implementation	3

**Total Credits 67**

Please Note:

- The IT-Programmer/Analyst program has August and January start dates. We advise you to meet with an academic advisor or counselor to successfully plan your academic schedule.
- This curriculum sequence is only for student planning. Actual student schedules will vary depending on course availability.
- Degree completion time may vary based on student scheduling and course availability.
- For General Education course descriptions (800 level), see section marked under Course Descriptions.

## **10152102 // 4 credits**

### **Programming Logic-Intermediate**

Building on previous learning of structured programming, this class introduces more complex algorithms and data structures. Programs will be written that involve concepts such as arrays, data validation, data manipulation, and beginning object oriented concepts.

*Prerequisite: Programming Logic-Beginning 10152101*

## **10152110 // 3 credits**

### **COBOL-Beginning**

Introduces the components of the COBOL language and gives hands-on experience in analyzing, coding, debugging, and executing batch programs. Structured programming techniques will be used to write programs that create reports and files using calculations, data validation, headings, detail, and summary information.

*Prerequisites: Programming Logic-Beginning 10152101; Introduction to the iSeries 10152120*

## **10152111 // 3 credits**

### **COBOL-Intermediate**

This is a continuation of beginning COBOL programming, done in an iSeries environment. More sophisticated programs are written involving concepts such as control-break principles, tables, indexed sequential file organization, file maintenance, different file access modes, sorting, merging, and subprograms.

*Prerequisite: COBOL-Beginning 10152110*

## **10152115 // 3 credits**

### **RPG-Beginning**

Introduces the components of the RPG language and gives hands on experience in analyzing, coding, debugging, and executing batch programs. Structured programming techniques will be used to write programs that include the use of calculations, looping, control breaks, table and array processing, data validation, and indexed sequential file maintenance.

*Prerequisites: Programming Logic-Beginning 10152101; Introduction to the iSeries 10152120*

## **10152116 // 3 credits**

### **RPG-Intermediate**

This is a continuation of Beginning RPG. Topics covered include display files, logical files, subfiles, and printer files. A project will be designed, coded and implemented in interactive RPG. Students will also be exposed to embedded SQL.

*Prerequisite: RPG-Beginning 10152115*

## **10152120 // 1 credit**

### **Introduction to the iSeries**

Introduces students to the iSeries midrange computer. Topics covered include creating and loading databases, compiling programs, the Source Entry Utility (SEU) and Program Development Manager (PDM).

*Prerequisite: Programming Logic-Beginning 10152101*

## **10152150 // 3 credits**

### **Web Programming**

*Using client-side technologies, students will create dynamic web sites. Tools may include elements of the following languages: HTML, CSS, JavaScript, XML.*

*Prerequisite: Programming Logic-Intermediate 10152102*

## **10152155 // 3 credits**

### **Web Data Management**

Using server-side technologies the student will create and demonstrate data connectivity to the web. Tools may include elements of the following languages: HTML, JavaScript, SQL, and PHP. The students will retrieve data for display to the web browser and capture data for storage from a web-based form.

*Prerequisite: 10152150 Web Programming*

## **10152170 // 3 credits**

### **Systems Analysis**

A practical course which provides an overview of the Systems Development Life Cycle and then focuses in on the analysis phase of real world computer and manual systems. Students learn concepts, techniques, and tools to aid in the analysis of existing systems, the identification of user requirements, and the design of database files. Both written and oral communications will be emphasized. Most of the work will be done in groups.

*Prerequisite: Programming Logic-Beginning 10152101*

## **10152171 // 3 credits**

### **Systems Design**

Provides actual hands-on experience with designing a software project. Students work in teams to develop software design documents, and software specifications. Concepts stressed are prototyping, documentation, communication, teamwork, and project management.

*Prerequisites: Systems Analysis 10152170; Access-Beginning 10103133 or Microsoft Office-Introduction 10103106*

## **10152172 // 3 credits**

### **Systems Implementation**

Discusses the importance of and need for Database Management Systems (DBMS). Students are introduced to the three major models: hierarchical, network, and relational. Students design and implement relational databases and learn SQL.

*Prerequisite: Systems Design 1015217, RPG-Beginning 10152115, or COBOL-Beginning 10152110*

## **10154101 // 2 credits**

### **IT Customer Support**

Develops skill in serving the needs of computer information system customers and documenting systems and procedures.

*Prerequisites: Systems Analysis 10152170; Written Communication 10801195 or consent of instructor*