



# STATE OF NORTH CAROLINA

**AUDIT OF THE INFORMATION SYSTEMS**

**GENERAL CONTROLS**

**MARTIN COMMUNITY COLLEGE**

**DECEMBER 2007**

**OFFICE OF THE STATE AUDITOR**

**LESLIE MERRITT, JR., CPA, CFP**

**STATE AUDITOR**

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Leslie Merritt, Jr.,  
CPA, CFP  
State Auditor

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**AUDITOR'S TRANSMITTAL**

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The Honorable Michael F. Easley, Governor  
Members of the North Carolina General Assembly  
The Board of Directors of Martin Community College  
Dr. Ann R. Britt, President

Ladies and Gentlemen:

We have completed our audit of Martin Community College. This audit was conducted during the period from August 14, 2007, through October 19, 2007. The audit was conducted in accordance with *Government Auditing Standards* and *Information Systems Audit Standards*.

The primary objective of this audit was to evaluate information systems (IS) general controls at Martin Community College. The scope of our IS general controls audit included general security, access controls, systems software, physical security, and disaster recovery. Other IS general control topics were reviewed as considered necessary.

This report contains an executive summary and audit results which detail the areas where Martin Community College has performed satisfactorily relevant to our audit scope, where improvements should be made, and where further study is necessary.

We wish to express our appreciation to the staff of Martin Community College for the courtesy, cooperation and assistance provided to us during this audit.

North Carolina General Statutes require the State Auditor to make audit reports available to the public. Copies of audit reports issued by the Office of the State Auditor may be obtained through one of the options listed in the back of this report.

Respectfully submitted,

A handwritten signature in cursive script that reads "Leslie W. Merritt, Jr.".

Leslie Merritt, Jr., CPA, CFP  
State Auditor

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## EXECUTIVE SUMMARY

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We conducted an Information Systems (IS) audit at Martin Community College from August 14, 2007, through October 19, 2007. The primary objective of this audit was to evaluate the IS general controls in place during that period. Based on our objective, we report the following conclusions:

**General security** involves the establishment of a reasonable security program that addresses the general security of information resources. Martin Community College has established a reasonable security program that addresses the general security of information resources. *We did not identify any significant weakness in general security during our audit.*

The **access control** environment consists of access control software and information security policies and procedures. We found several weaknesses in access controls. Due to the sensitive nature of the conditions found in these weaknesses, we have conveyed these findings to management in a separate letter pursuant to the provision of North Carolina G.S. 147-64.6(c)(18).

**Systems software** is the collection of programs that drive the computer. The selection of systems software should be properly approved and the software should be maintained by the computer center. *We did not identify any significant weaknesses in systems software during our audit.*

**Physical security** primarily involves the inspection of the agency's computer center for the controls that should reasonably secure the operations of the computer center from foreseeable and preventable threats from fire, water, electrical problems, and vandalism. *We did not identify any significant weaknesses in physical security during our audit.*

A complete **disaster recovery** plan that is tested periodically is necessary to enable Martin Community College to recover from an extended business interruption due to the destruction of the computer center or other Martin Community College assets. Our audit did note a weakness in disaster recovery. *See Audit Finding 1, Resumption of Computer Systems.*

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## AUDIT OBJECTIVES, SCOPE, AND METHODOLOGY

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### OBJECTIVES

Under the *North Carolina General Statutes* 147-64.6, the State Auditor is responsible for examining and evaluating the adequacy of operating and administrative procedures and practices, systems of accounting, and other elements of State agencies. IS general control audits are examinations of controls which effect the overall organization and operation of the IS function. This IS audit was designed to ascertain the effectiveness of general controls at Martin Community College.

### SCOPE

General controls govern the operation and management of computer processing activities. The scope of our IS general controls audit was to review general security issues, access controls, systems software, physical security, and disaster recovery which directly affect Martin Community College's computing operations. Other IS general control topics were reviewed as considered necessary.

### METHODOLOGY

We audited policies and procedures, interviewed key administrators and other personnel, examined system configurations, toured the computer facility, tested on-line system controls, reviewed appropriate technical literature, reviewed computer generated reports, and used security evaluation software in our audit of general controls. We conducted our audit in accordance with the standards applicable to performance audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States and *Information Systems Audit Standards* issued by the Information Systems Audit and Control Association.

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## **BACKGROUND INFORMATION**

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Martin Community College, located in Williamston, North Carolina, was founded in 1967 and received its first accreditation from Southern Association of Colleges and Schools in 1976 to award degrees, certificates, and diplomas. The College offers two year degrees and certificates in technical, vocational, and general education. The mission of the College is to provide educational programs leading to an associate degree, diploma, or certificate and services to the citizens in the surrounding community.

The Information Technology Director is responsible for carrying out all Information Technology (IT) missions and functions for Martin Community College. This position reports to the Dean of Administrative Services. The mission of the IT function is to provide effective, efficient, and high quality technology service, which meets the management and administrative needs of the College and its staff, in support of the College's strategic goals and objectives. The IT function is responsible for operating all of the College's computer systems and networks, including administrative computers, instructional computer labs, and the library local area network (LAN).

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## AUDIT RESULTS AND AUDITEE RESPONSES

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The following audit results reflect the areas where Martin Community College has performed satisfactorily and where recommendations have been made for improvement.

### GENERAL SECURITY ISSUES

General security issues involve the maintenance of a sound security management structure. A sound security management structure should include a method of classifying and establishing ownership of resources, proper segregation of duties, a security organization and resources, policies regarding access to the computer systems and a security education program. *Our audit did not identify any significant weakness in general security.*

### ACCESS CONTROLS

The most important information security safeguard that Martin Community College has is its access controls. The access controls environment consists of Martin Community College's access control software and information security policies and procedures. An individual or a group with responsibility for security administration should develop information security policies, perform account administration functions and establish procedures to monitor and report any security violations. We noted a number of weaknesses in access controls. Due to the sensitive nature of the conditions found in the weaknesses, we have conveyed these findings to management in a separate letter pursuant to the provision of North Carolina G.S. 147-64.6(c)(18).

### SYSTEMS SOFTWARE

Systems software is the collection of programs that the computer center uses to run the computer and support the application systems. This software includes the operating system, utility programs, compilers, database management systems and other programs. The systems programmers have responsibility for the installation and testing of upgrades to the system software when received. Systems software changes should be properly documented and approved. *Our audit did not identify any significant weaknesses in system software.*

### PHYSICAL SECURITY

Controls over physical security are designed to protect a computer center from service interruptions resulting from fire, water, electrical problems, vandalism, and other causes. The physical security controls ensure that the computer service center is reasonably secure from foreseeable and preventable threats to its physical continuity. *Our audit did not identify any significant weakness in physical security.*

## AUDIT RESULTS AND AUDITEE RESPONSES (CONCLUDED)

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### DISASTER RECOVERY

Disasters such as fire and flood can destroy a computer service center and leave its users without computer processing support. Without computer processing, many College services would grind to a halt. To reduce this risk, computer service centers develop disaster recovery plans. Disaster recovery procedures should be tested periodically to ensure the recoverability of the data center.

#### ***AUDIT FINDING 1: RESUMPTION OF COMPUTER SYSTEMS***

Martin Community College has a disaster recovery plan to ensure the resumption of computer systems during adverse circumstances. However, the disaster recovery plan has not been tested to ensure that the plan is effective.

In the event of a disaster, a test of the disaster recover plan is necessary to ensure the proper recovery of computer resources. Management should ensure that a written plan is developed and maintained in accordance with the overall framework for restoring critical information services in the event of a major failure. The disaster recovery plan should minimize the effect of disruptions. Procedures should require that the plan be reviewed and revised annually or when significant changes to the College's operation occur.

*Recommendation:* Martin Community College should test the disaster recovery plan on an annual basis.

*Auditee's Response:* Martin Community College concurs with the findings and has taken measures to improve upon testing of Disaster Recovery. Previously, restoration to the CIS box had been tested due to emergency situations and more recently was tested as a scheduled event in September of 2007. In recent months a committee has been set up as well to make sure plans are in place, tested, and updated as necessary.

## ORDERING INFORMATION

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