

EASTERN FLORIDA STATE COLLEGE

Ellucian Banner® Enterprise Resource
Planning System



Sherrill F. Norman, CPA
Auditor General

Board of Trustees and President

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The team leader was Rebecca Ferrell, CISA, and the audit was supervised by Heidi Burns, CPA, CISA, Audit Manager.

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EASTERN FLORIDA STATE COLLEGE

Ellucian Banner® Enterprise Resource Planning System

SUMMARY

This operational audit focused on evaluating selected information technology (IT) controls applicable to the Ellucian Banner® Enterprise Resource Planning (Banner® ERP) system. As summarized below, our audit disclosed areas in which improvements in Eastern Florida State College (College) controls and operational processes are needed.

Finding 1: College IT security controls related to user authentication, user account management, and logging and monitoring need improvement to ensure the confidentiality, integrity, and availability of College data and IT resources.

BACKGROUND

Eastern Florida State College (College) is under the general direction and control of the Florida Department of Education, Division of Florida Colleges, and is governed by State law and State Board of Education rules. A Board of Trustees (Board) governs and operates the College. The Board constitutes a corporation and is composed of members appointed by the Governor and confirmed by the Senate. The College President serves as the executive officer and the corporate secretary of the Board, and is responsible for the operations and administration of the College.

The College uses the Ellucian Banner® Enterprise Resource Planning (Banner® ERP) system for the recording, processing, and reporting of finance, human resources, and student-related transactions. In addition, the College maintains and manages the network domain, application, Web and database servers, and database management system supporting the Banner® ERP system.

FINDINGS AND RECOMMENDATIONS

Finding 1: Security Controls – User Authentication, User Account Management, and Logging and Monitoring

Security controls are intended to protect the confidentiality, integrity, and availability of data and information technology (IT) resources. Our audit procedures disclosed that certain security controls related to user authentication, user account management, and logging and monitoring need improvement. We are not disclosing specific details of the issues in this report to avoid the possibility of compromising the confidentiality of College data and related IT resources. However, we have notified appropriate College management of the specific issues.

Without appropriate security controls related to user authentication, user account management, and logging and monitoring, the risk is increased that the confidentiality, integrity, and availability of College data and related IT resources may be compromised.

Recommendation: We recommend that College management improve certain security controls related to user authentication, user account management, and logging and monitoring to ensure the confidentiality, integrity, and availability of College data and IT resources.

OBJECTIVES, SCOPE, AND METHODOLOGY

The Auditor General conducts operational audits of governmental entities to provide the Legislature, Florida's citizens, public entity management, and other stakeholders unbiased, timely, and relevant information for use in promoting government accountability and stewardship and improving government operations.

We conducted this IT operational audit from September 2017 through January 2018 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for the audit findings and our conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for the audit findings and our conclusions based on our audit objectives.

This IT operational audit focused on evaluating selected IT controls applicable to the Banner® ERP system during the period September 2017 through January 2018. The overall objectives of the audit were:

- To evaluate the effectiveness of selected IT controls in achieving management's control objectives in the categories of compliance with controlling laws, administrative rules, and other guidelines; the confidentiality, integrity, availability, relevance, and reliability of data; and the safeguarding of IT resources.
- To identify statutory and fiscal changes that may be recommended to the Legislature pursuant to Section 11.45(7)(h), Florida Statutes.

This audit was designed to identify, for the IT systems and controls included within the scope of the audit, deficiencies in management's internal controls; instances of noncompliance with applicable governing laws, rules, or contracts; and instances of inefficient or ineffective operational policies, procedures, or practices. The focus of this audit was to identify problems so that they may be corrected in such a way as to improve government accountability and efficiency and the stewardship of management. Professional judgment has been used in determining significance and audit risk and in selecting the particular IT controls, legal compliance matters, and records considered.

As described in more detail below, for the IT systems and controls included within the scope of this audit, our audit work included, but was not limited to, communicating to management and those charged with governance the scope, objectives, timing, overall methodology, and reporting of the audit; obtaining an understanding of the IT systems and controls; exercising professional judgment in considering significance and audit risk in the design and execution of the research, interviews, tests, analyses, and other procedures included in the audit methodology; obtaining reasonable assurance of the overall sufficiency and appropriateness of the evidence gathered in support of the audit findings and our conclusions; and reporting on the results of the audit as required by governing laws and auditing standards.

This audit included the selection and examination of IT system controls and records. Unless otherwise indicated in this report, these items were not selected with the intent of statistically projecting the results,

although we have presented for perspective, where practicable, information concerning relevant population value or size and quantifications relative to the items selected for examination.

An audit by its nature does not include a review of all records and actions of agency management, staff, and contractors and, as a consequence, cannot be relied upon to identify all instances of noncompliance, fraud, abuse, or inefficiency.

In conducting this audit, we:

- Interviewed College staff and reviewed documentation applicable to College operations for the Banner® ERP system infrastructure to obtain an understanding of and evaluate:
 - The network architecture and IT infrastructure hosting the Banner® ERP system.
 - Authentication controls applicable to the College's IT infrastructure, including selected hardware, operating systems, network, and database related to the Banner® ERP system.
 - System software and network infrastructure component change control procedures and processes related to the infrastructure supporting the Banner® ERP system.
 - Application change control procedures and processes related to the Banner® ERP system.
 - Logging and monitoring of security events and privileged administrative actions for the infrastructure related to the Banner® ERP system.
 - Vulnerability management (logging, monitoring, and remediation) for the network and critical network infrastructure related to the Banner® ERP system.
- Evaluated the effectiveness of logical access controls, including periodic reviews for the network domain, servers, and database supporting the Banner® ERP system.
- Examined and evaluated the appropriateness of administrative privileges, as of September 20, 2017, for the College's network domain and application servers.
- Examined and evaluated the appropriateness of services enabled on the database and Web servers as of September 20, 2017. Specifically, we examined and evaluated:
 - 43 services on the database server.
 - 4 services on the Web server.
- Examined and evaluated the appropriateness of accounts and associated administrator access privileges granted as of September 20, 2017, to:
 - 46 accounts assigned to the database server.
 - 45 accounts assigned to the Web server.
- Examined and evaluated the appropriateness of accounts and privileges granted to the database as of September 20, 2017. Specifically, we examined and evaluated:
 - 5 user accounts with database privileges that allow direct database sign-on.
 - 91 accounts that were assigned selected administrative privileges.
- Evaluated user authentication controls related to the College's IT infrastructure supporting the Banner® ERP system.
- Evaluated the effectiveness of the College's logging and monitoring controls related to the College's IT infrastructure supporting the Banner® ERP system.
- Evaluated the effectiveness of the College's change management controls related to the approvals, testing, and implementation of Banner® ERP system changes.

- Evaluated the effectiveness of system software and network infrastructure component change control procedures related to the College's IT infrastructure applicable to the Banner® ERP system.
- Evaluated the effectiveness of the College's vulnerability management (logging, monitoring, and remediation) for the network and critical network infrastructure supporting the Banner® ERP system.
- Communicated on an interim basis with applicable officials to ensure the timely resolution of issues involving controls and noncompliance.
- Performed various other auditing procedures, including analytical procedures, as necessary, to accomplish the objectives of the audit.
- Prepared and submitted for management response the findings and recommendations that are included in this report and which describe the matters requiring corrective actions. Management's response is included in this report under the heading **MANAGEMENT'S RESPONSE**.

AUTHORITY

Section 11.45, Florida Statutes, provides that the Auditor General may conduct audits of the IT programs, activities, functions, or systems of any governmental entity created or established by law. Pursuant to the provisions of Section 11.45, Florida Statutes, I have directed that this report be prepared to present the results of our IT operational audit.



Sherrill F. Norman, CPA
Auditor General

MANAGEMENT'S RESPONSE



April 11, 2018

Sherrill F. Norman
Auditor General
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Tallahassee, FL 32399-1450

RE: EFSC Information Technology Operational Audit Response

Dear Ms. Norman:

The following is the response to the preliminary and tentative finding of your information technology operational audit of the Eastern Florida State College, Ellucian Banner® Enterprise Resource Planning System.

Finding 1: Security Controls – User Authentication, User Account Management, and Logging and Monitoring

The College agrees with the findings and recommendation included in the report. We have taken appropriate corrective actions to improve security controls related to user authentication, user account management, and logging and monitoring to ensure the confidentiality, integrity, and availability of College data and IT resources.

Sincerely,

Dr. James H. Richey
President

President
James H. Richey, J.D.

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