Grading System Access Risk and Control

The risk of inappropriate grade changes.

- Department of Internal Audit
- Department of Information Security
Risk and Access Controls

* Risk Related to System Access
  * Are you who you say you are?
  * Does your position requirements create a separation of duties conflict?
  * Can you perform tasks outside of your required duties?

* Access Controls Include
  * Use of unique login user name
  * Association of user name to identifiable individual
  * Use of user password related to specific username
  * Limitation on length and complexity of user password
  * Limitation on length of time between required password changes
  * Limitation on the activities allowed by each user name
  * Limitation on the number of concurrent logons allowed for a single user name
Unauthorized individuals gaining access to grading systems and altering the grade earned.

- Related risk events.
  - Are you who you say you are?
  - Can you alter data in excess of required duties?

- Is this fraud?
  - Yes. Fraud can be defined as:
    - An intentional act against a person or entity made by another for monetary or personal gain.
Rationalization
Fraud schemes require that the individual be able to rationalize the activity.

Mitigation
An effective control to reduce the impact of this element is an organization’s emphasis on ethics, conflict of interest and hiring standards.

Opportunity
Fraud schemes require that the individual be able to execute the activity.

Mitigation
An organization’s internal control structure is the most effective method of limiting the opportunity for fraudulent activity to occur.

Incentive
Fraud schemes require that the individual be reacting to some existence of need.

Mitigation
An organization’s best method to mitigate this element of fraud is to monitor the working environment and the morale within the department or work group.
Risk Mitigation can Include:

- **Prevention** – Take action to make the fraud more difficult to execute.
- **Detection** – Implement monitoring procedures to assist in the detection of red flags.
- **Transference** – Contractually transfer the risk to another party.
- **Avoidance** – Eliminate the activity or function which was related to the specific risk of fraud.
- **Acceptance** – Acknowledge that the fraud may occur but that any mitigating activities would be cost prohibitive.
How are these frauds occurring?

* Recent cases of manipulation of the grading systems involve:
  * Use of technology (key loggers)
  * Breaking and Entering
  * Computer Hacking
  * Social Exploitation?
* Lets view a couple of news stories.
Who Is Roy Sun? Purdue Graduate Sentenced To Jail For Changing Grades To Straight A's

By Treye Green  @TreyGreen  t.green@ibtimes.com  on March 04 2014 8:40 PM

What one Purdue University graduate thought was an easy A turned out to be a major failure.

Roy Sun, 25, was sentenced on Feb. 27 to a four-year prison term for hacking into the university's computer system to change his and several other student's course grades. According to the Journal and Courier, it was ruled that Sun will serve a total of 90 days in jail. The rest of his sentence will be with four years of supervised probation and 100 hours of community service.

The scheme first kicked off in 2009 when Sun changed a single course grade to test if he Purdue student Mitsutoashi Shirasaki would get caught. After successfully altering the one grade without anyone noticing the change, Sun said he felt invincible "When I came back in 2009, I felt really arrogant. I thought I was untouchable," Sun said during his sentencing last week. "It became so much easier to change my grades than going to class and working real hard."

During his senior year, Sun missed all of his classes but one. However, with the help of the pair's scheme, he was still able to receive straight A's. Sun and Shirasaki had become so brazen that they would hack into professor's computers just around 10 minutes before their final grades were submitted. They even changed the grade of a third friend, Sujay Sharma. Sharma wasn't aware that his grade was changed, but he did serve as a lookout for the two.
They were able to successfully gain access to their professor’s information by installing keystroke logging software onto the professors’ computers. Or if a professor entered grades remotely, Sun would hack into the instructor’s personal information to gain access to their accounts. According to Boston.com, the affidavit revealed that Sun changed eight F’s and one D to all A’s. Shirasaki changed his grades from F’s, D’s and C’s to all B’s and A’s. Shirasaki was even accused of changing one of his girlfriend’s grades from an A to an A+.

Sun and Sharma both pled guilty to their charges in the case on Dec. 30. Sun faced charges that included computer tampering and conspiracy to commit computer tampering. Sun was also expelled from his graduate program at Boston University and stripped of his bachelor’s degree from Purdue – the same degree that landed him a $70,000 per year job straight out of undergrad. He left his post-college job to go back to grad school. BU spokesman Colin Riley confirmed to Boston.com that Sun had been enrolled in a BU grad program for one semester.

Sharma was sentenced to 18 months of probation and 200 hours of community service. Sharma had just one class remaining after studying nuclear engineering at Purdue for six years. But he was expelled after a review from the Office of the Dean of Students, reports the Purdue Exponent. Shirasaki fled to Japan at Sun’s request.
Schools making the news in the past few years for grade changing include:

- Georgia Tech (2) - 2012
- Albany State University - 2012

How easy is it to obtain these?
Grading System - Access Risks and Controls

KeyKatcher 64K PS/2 Hardware Keylogger
by KEYKatcher

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- No software or drivers needed
- National keyboard layout support
- Capable of recording ALL keys

8 new from $54.90 1 refurbished from $51.98

Product Description

KeyLlama records everything typed on a USB keyboard. Absolutely no software is required and KeyLlama is completely invisible to any software. The KeyLlama USB is the stealthiest hardware keylogger in existence - it is impossible to detect!

Unlike many other keyloggers, these work with both low and full-speed USB Keyboards. They also work with all wireless USB keyboards. If others don't specifically state it will work, it almost certainly won't. Simply put, KeyLlama has the best compatibility of any hardware keylogger.

Note: KeyLlama is invisible to the Operating System when installed. Only after you have entered the special key combination, will the KeyLlama appear on your computer as a USB Flash Drive, with a file containing the recorded text.

KeyLlama USB Premier

The KeyLlama USB Premier is an advanced USB hardware keylogger with 8MB of memory - Two full years' worth of typing! Everything typed on the USB keyboard is captured and stored on the internal Flash Drive in a special file. Text data may be retrieved on any PC with a USB port and keyboard. Data is accessed just like using a USB Flash drive. Of course, you can delete the recorded log and start over as often as you like.

KeyLlama Premier is advanced enough to be used by laws enforcement agencies around the world, yet simple enough for the least computer savvy parent to monitor their techno-whiz children!

Features:
* Huge memory capacity - Easy to erase again and again
* 100% Stealthy - Lifetime guarantee against detection by anti-virus software
* No software or drivers required
* Quick and easy national keyboard layout support
* Ultra compact and discrete, extends just 1.6” when plugged in
* Strong Encryption to help keep sensitive data safe
* Capable of recording ALL keys
* 12 Month Warranty
* Proudly Made in the USA

Grading System - Access Risks and Controls
Could these have been better mitigated?

- **Rationalization**
  - Mitigation could include better focus, training, and awareness on ethical behavior.
- **Incentive**
  - Improved counseling and assessment.
- **Opportunity**
  - Improved Security
    - 2 factor authentication - e.g., e-mail for changes
    - Improved awareness and monitoring
  - **System Monitoring**
    - Changes occurring at unusual times
    - Changes originating outside expected IP addresses
    - Required confirmation of late changes
Actions if you suspect this has occurred.

- Ask Questions
- University of West Georgia has multiple ways to report suspicion.
  - Management
  - Ombudsman - http://www.westga.edu/ombuds/
  - Internal Audit - http://www.westga.edu/auditor/
  - Hotline - https://westga.alertline.com/gcs/welcome
Questions?