



DIGITAL FORENSICS  
INFORMATION ASSURANCE

# Integrated Science & Technology 464

## Network Security & Cyber Crime – Writing Intensive

**Fall 2015**

**T/TH 9:30a-10:45a**

**WAEC 1232**

**Instructor** – John Sammons

**Office** – Weisburg Applied Engineering Complex – WAEC 2003

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**Office Hours:**

Monday 10:00am – 11:00am

Tuesday 2:00pm – 3:00pm

Wednesday 10:00am – 11:00am

Thursday 2:00pm – 3:00pm

Friday 10:00am – 11:00am

### Textbook

Both books are required.

*11<sup>th</sup> Hour CISSP, Second Edition*. Eric Conrad, Seth Misenar, Joshua Feldman. Syngress; (November 7, 2013).  
978-0124171428

*Future Crimes: Everything Is Connected, Everyone Is Vulnerable and What We Can Do About It*. Marc Goodman.  
Doubleday; (February 24, 2015), 978-0385539005

### Course Description

IST 464 examines fundamental security concepts, protocols, and procedures commonly in use today. Topics include governance, access control, cryptography, physical security, security architecture, application development security, and more. The course will also look at some of the common tactics and techniques used in cybercrime to steal money and data.

### Credit

The course earns three (3) credit hours.

## Pre/co-requisites

IST 264 Technology Foundations  
IST 449 Data Recovery and Analysis

## Course Learning Objectives

| Course Student Learning Outcomes   | How students will practice each outcome in this Course   | How student achievement of each outcome will be assessed in this Course                        |
|--|--|--|
| Students will effectively <b>explain</b> and <b>apply</b> proper access controls.  | PowerPoint/Prezi development, peer & instructor review, journal assignments                    | Presentations, Quiz questions, concept map, high stakes writing assignment, "hot seat" quizzes |
| Students will <b>explain</b> the tactics, techniques, and procedures used by the APT and cyber criminals   | Case studies and practical exercises, journal assignments                                      | Presentations, Quiz questions, concept map, high stakes writing assignment                     |
| Students will <b>demonstrate</b> their ability to communicate effectively both orally and in writing.  | PowerPoint/Prezi development, peer & instructor review, journal assignments, oral presentation | Presentations, Quiz questions, concept map, high stakes writing assignment.                    |
| Students will be able to <b>identify</b> and <b>explain</b> common cryptographic systems.  | Case studies and practical exercises, journal assignments                                      | Presentations, Quiz questions, concept map, high stakes writing assignment.                    |
| Students will enhance their writing skills and strategies  | Journal exercises, medium stakes writing assignments, rough drafts                             | High stakes writing assignment   |
| Students will <b>arrange</b> key course content into a comprehensive, detailed concept map that clearly demonstrates the relationship of one concept to another. | Practice concept map.  | Mid-Term & Final Concept Maps  |

## Instruction Method

This is a writing intensive course. There will be 3 contact hours of classroom instruction per week. Coursework will include classroom lectures, a learning journal, and exams; along with a variety of low, med and high stakes writing assignments. You are expected to take an active role in your learning. Discussions and writing assignments play significant roles in the conduct of the course.

This course will be taught using active learning, “flipped classroom,” and writing intensive methodologies. This means that lectures, as a delivery method will be limited. For students, this means that you will be expected to complete all assigned “pre-work” before the start of class, participate in group assignments, and complete in-class exercises. As a writing intensive course, students will be assigned a variety of low, medium, and one high stakes writing assignment.

There is a writing guide for the course located on Blackboard that explains the writing requirements, assignments, and the reasoning behind them. You need to read this as it will explain most of the common assignment types and answer many of your questions.

## Evaluation method

Course grades will be based on a total points system. Your grade will be based on a percentage of the total points possible.

## Course Point Distribution

| Assignment/Assessment               | Points Possible  |
|-------------------------------------|--|
| Midterm & Final Exam (Concept Maps) | 200  |
| Projects & Assignments              | 200 (Approx. Subject to change based on progress)        |
| Learning Journals                   | 200  |
| High Stakes Writing Assignment      | 200  |
| Quizzes                             | 200 (Approx. Subject to change based on progress)        |
| <b>Total</b>                        | <b>800</b> (Approx. Subject to change based on progress) |

Final letter grades are determined based on the following grading scale:

|         |   |
|---------|---|
| 90-100% | A |
| 80-89%  | B |
| 70-79%  | C |
| 60-69%  | D |
| 0 – 59% | F |

The instructor reserves the right to change these values depending on the overall class performance and/or extenuating circumstances. Please note that your final grade will be calculated by hand, NOT from the totals/weights that you may see on Bb. Grades will be posted as quickly as possible into the Bb system. However, please keep in mind that those times will vary.

## Policy Statement

### *My Academic Dishonesty Policy*

Academic Dishonesty is defined as any act of a dishonorable nature which gives the student engaged in it an unfair advantage over others engaged in the same or similar course of study and which, if known to the classroom instructor in such course of study, would be prohibited. Academic Dishonesty will not be tolerated as these actions are fundamentally opposed to "assuring the integrity of the curriculum through the maintenance of rigorous standards and high expectations for student learning and performance" as described in Marshall University's Statement of Philosophy.

By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy by going to [www.marshall.edu/academic-affairs](http://www.marshall.edu/academic-affairs) and clicking on "Marshall University Policies." Or, you can access the policies directly by going to [http://www.marshall.edu/academic-affairs/?page\\_id=802](http://www.marshall.edu/academic-affairs/?page_id=802)

You are expected to read the following University Policies: Academic Dishonesty/ Excused Absence Policy for Undergraduates/ Computing Services Acceptable Use/ Inclement Weather/ Dead Week/ Students with Disabilities/ Academic Forgiveness/ Academic Probation and Suspension/ Academic Rights and Responsibilities of Students/ Affirmative Action/ Sexual Harassment

In this course, **STUDENTS ARE NOT TO "COPY & PASTE" MATERIAL FROM ANY SOURCE INTO ANY ASSIGNMENT UNLESS SPECIFICALLY AUTHORIZED BY THE INSTRUCTOR.**

If you are found cheating on projects or plagiarizing answers from the Internet or other sources, there will be no second chances. Your penalty will be a failing grade for the course. In those cases in which the offense is particularly flagrant or where there are other aggravating circumstances, additional, non-academic, sanctions may be pursued through the Office of Judicial Affairs. Notice of an act of academic dishonesty will be reported to the Department Chair, Dean of the College of Science, and to the Office of Academic Affairs. Please refer to the Marshall University Undergraduate Catalog for a full definition of academic dishonesty.

Your assignments may be analyzed using the anti-plagiarism suite of tools powered by Turnitin. Please visit <http://turnitin.com> for more information.

*Assignments:* The course includes a number of writing assignments. All assignments are due **by the date and time noted in Bb. NO LATE ASSIGNMENTS WILL BE ACCEPTED.** There are VERY specific cutoff dates/times for submission. Please do not procrastinate. If you wait until the last night to start a writing assignment, chances are, you will fail. All (or the majority of) assignments **MUST** be submitted through Bb. Should some technical issue arise that makes this impossible, the instructors University email address will serve as the secondary means of submission. Should submission prove to be impossible, students are expected to leave a voice mail on the Instructors office phone. In ALL instances any email or voicemail **MUST** have a date/time stamp that is **BEFORE** the due date/time of the assignment. Submissions that do not will be rejected. If you have an extenuating circumstance that prevents you from submitting an assignment by the due date/time you will need to contact the instructor prior to the due date to explain the circumstance and obtain permission for a late assignment. Failure to contact the instructor prior to the due date with result in a zero on the assignment.

All assignments must follow the format described in the assignment instructions in Bb. Failure to follow the specific formatting and naming instructions could result in a zero for the assignment.

File Names: All electronic submissions must follow this file naming convention:

Ist447\_Last Name\_First Initial\_Assignment Name.doc ("Ist447\_sammons\_j\_researchpaper.doc")

*Exams:* There are TWO exams. They will be take home concept maps covering all the course material to that particular point.

*Make-up Quizzes/Assignments and Late Penalty:* Make-up exams will not be given except under unusual circumstances and satisfactory written justification. Any student who misses a quiz/assignment due to an unexcused absence will receive a grade of zero with no opportunity for make-up or substitution. Only University excused absences or those occurring with a good reason (and that reason must be given prior to missing the quiz/assignment) will be accepted. Make up quizzes/assignments must be taken within one week of the original scheduled date. The decision to allow a make-up quiz or accept late work rests with the instructor. Please note, your university excuse **MUST** be received by me within TWO weeks of the missed assignment/test. Excuses received after that time period will not be accepted.

## **Attendance Statement**

Attendance is very important in this course. If you miss class, it is your responsibility to request missed material from the instructor or classmates. It will not be the responsibility of the instructor to re-teach or re-lecture to you outside of class. Throughout the semester, there will be in-class assignments that are done for a grade. Those assignments cannot be made up without a university excused absence.

You are expected to be in class and ready to begin by the time class starts. While, I understand that unexpected events occur which may make you late on occasion it should not be a repeated occurrence. Repeated tardiness will result in refusal of admittance to the class.

## **Class Cancellation**

There may come a time during the semester when class could be cancelled (illness, weather, etc). Should that occur, I will notify everyone through their official university email and post an announcement on Bb. You are responsible for checking these early and often to ensure that class will be held as scheduled. Should there be some technological issue that prevents me from doing that, a sign should be posted on the classroom door.

## **Professionalism**

In this course you will be treated as professionals and will be expected to behave and perform as such. As professionals, you will be expected to attend class, be on time, complete all of your assignments, meet deadlines, ask questions when you don't understand, and participate. Participating in class means that you are not on your cell phone or surfing the Internet. Once class begins University computers you use are intended for classroom work and not for personal use. This includes checking Facebook, other social media sites, and surfing the Web. If you can't be in class, I expect you to let me know ahead of time. Your classroom language and demeanor should also be professional all times.

When sending correspondence to the instructor it is expected that your language and content of your correspondence be clear, professional and polite. You should view this correspondence as a business communication and not a personal communication. Correspondence that is unclear, rude and unprofessional will not be responded to.

## **University Holidays & Key Dates**

### **September 7, Monday**

Labor Day – University closed

### **October 12, Tuesday - October 17, Friday**

Midterms

**November 23, Monday – November 28, Saturday**

Thanksgiving/Fall Break – Classes Dismissed

**November 26, Thursday – November 27, Friday**

Thanksgiving Holiday – University Closed

**November 30, Monday**

Classes Resume

**December 4, Friday**

Last Day to Drop

**November 30, Monday – December 4, Friday**

Dead Week

**December 4, Friday**

Last Class Day

**December 7, Monday – December 11, Friday**

Final Exams

**December 23, Wednesday – January 1, 2015, Friday**

Winter Break – University closed

**Expectations**

1. Work/Think Hard
2. Participate
3. Act with Integrity
4. Embrace the Challenges
5. Tell Me if You Have a Problem
6. Own Your Mistakes and Shortcomings
7. Help Your Fellow Students
8. Be Willing to Work Outside Your Comfort Zone
9. Have FUN!
10. Treat Everyone with Respect
11. Read the Syllabus
12. Check Bb and Your Email Very Often
13. Check Bb for Due Dates and Assignment Specifics
14. Read All of the Assigned Materials
15. Refrain from personal cell phone and computer use in class.

**Technical Competencies**

Students are expected to be proficient working with Microsoft Office products or their equivalent. In addition, students will need to use a VUE to create concept maps. VUE is a free, open source tool that works well on Windows or Macintosh computers. It can be downloaded here: <http://vue.tufts.edu/>. VUE is very simple to use with a very short learning curve. Using other tools to create concept maps requires permission from the instructor. Students are also expected to be proficient using the Blackboard system (submitting assignments, navigating the class space, taking tests, etc).

## Topics and Methodology

The following outline delineates the tentative class schedule with topics to be addressed during the course. Reading assignments are TBA. Please note these topics and schedules are tentative. FC = Future Crimes

| Week | Dates             | Lecture Topics                   | Reading            |
|------|-------------------|----------------------------------|--------------------|
| 1    | Aug 24 - 28       | Intro, Module "0", VUE           | Bb<br>FC 1-2       |
| 2    | Aug 31 – Sept 4   | Introduction, Setting the Stage  | Bb<br>FC 2-3       |
| 3    | Sept 7 - 11       | Access Control                   | Chap 2<br>FC 3-6   |
| 4    | Sept 14 - 18      | Access Control                   | Chap 2<br>FC 6-7   |
| 5    | Sept 21 - 25      | Cryptography                     | Chap 3<br>FC 7-10  |
| 6    | Sept 28–<br>Oct 2 | Cryptography                     | Chap 3<br>FC 10-11 |
| 7    | Oct 5 - 9         | Security Architecture & Design   | Chap 5<br>FC 11-12 |
| 8    | Oct 12 - 16       | Midterm                          | N/A                |
| 9    | Oct 19 - 23       | Security Architecture & Design   | Chap 5<br>FC 12-16 |
| 10   | Oct 26 - 30       | Advanced Persistent Threat (APT) | Bb<br>FC 16        |
| 11   | Nov 2 – 6         | Incident Response                | TBA                |
| 12   | Nov 9 - 13        | Incident Response                | TBA                |
| 13   | Nov 16 - 20       | Cyber Crime                      | TBA                |
| 14   | Nov 23 - 27       | Fall Break                       | N/A                |
| 15   | Nov 30 – Dec 4    | Cybercrime                       | Bb                 |

In Future Crime, you will be responsible for reading chapters: 1, 2, 3, 6, 7, 10, 11, 12, 16. We will be discussing this material throughout semester as we go. You will be completing assignments from this book as well. It is **CRITICAL** that you keep pace with the readings.

Every student is responsible for all materials presented in class, including lectures, notes, and handouts. In case you are not present for a class, it is your responsibility to contact the instructor and receive information about the material presented in that class. Class attendance is VERY IMPORTANT.

### **Effort Required**

This course requires significant effort both in and out of class. Outside of class students will be expected to keep pace with the reading/videos and come to class prepared. If you come to class unprepared it will negatively impact your ability to complete the lab exercises. For every one hour in class, the student is expected to put in an effort of at least 3 hours outside the class for studying and completing writing assignments. Depending upon background and preparedness, some students may have to put in additional effort. **DO NOT PROCRASTINATE**. Prioritize, schedule, and take responsibility for your actions and you should do very well in this class. To be successful in this course, you **MUST** take an active role in the learning process.

### **Learning Journal**

As part of this class, each student must maintain a learning journal. This journal will contain a variety of low/medium stakes assignments, many to be done in class. It is your responsibility to keep it current. It will be turned in at the end of each learning module. The journals are graded **ALL or NONE**. If the journal is complete, formatted correctly, and turned in on time you will receive full credit. Missing, incorrectly formatted, and late entries will result in a 0. You will be responsible for all the entries listed in Bb.

Do NOT procrastinate. You will need your journal during almost every class. It is your responsibility to ensure that it's available and kept safe. You would be wise to make frequent back-ups of your journal. You may want to consider using Dropbox ([www.dropbox.com](http://www.dropbox.com)) or Google Drive.

### **Tests & Readings**

The number of quizzes will vary, depending on class progress, participation, and the how well students keep up with assignments, readings, etc. Ideally there will be a quiz for each module. The midterm and final will be take home concept maps. Students are expected to keep up with all reading assignments and come to class prepared to discuss the material.

### **Communication**

Private E-mail will be used to make any general announcements, last minute changes, etc. It is **mandatory** that you monitor your email messages at least once a day. PLEASE ONLY USE MY MARSHALL EMAIL ADDRESS FOR CORRESPONDENCE. Messages left on Blackboard will result in delayed or no responses. Please read and follow the guidelines outlined in the "How to Email Your Professor" article. Communication with your instructor needs to be professional and polite. There is a link to it posted on Bb. Using my University email ensures you get a response and the course run smoothly. During periods of inclement weather, check your email and Bb the night before, and the morning of class to see if it has been cancelled.

### **Note about cell phones and Internet in class**

Please set your cell phone ringer to "Vibrate Only" mode (or turn it off) before you enter the classroom. If you need to take an emergency phone call please step out of the classroom. While in class, you will be expected to work on class related materials/assignments. It is not acceptable to surf the web, play online games, or work on assignments from

other classes during class time. During tests given in the classroom it is not acceptable to have your phone or laptop out or in use.

### **Disclaimer**

The instructor reserves that right to modify the course schedule and evaluation system should it become necessary for the effective conduct of the course.

### **Social Networking**

I often receive friend requests from students via Facebook. It is my policy however, not to accept these requests from current students. This is absolutely nothing personal, so please do not take it as such. You are welcome to follow me on Twitter and or join my network on Linked-In. Please join us on the MU Digital Forensics Facebook page.

Please participate in our social media channels:

Facebook:: Marshall Digital Forensics & Appalachian Institute of Digital Evidence

Twitter:: @ MUDigForensics & @AppyIDE

Join the student chapter of Appalachian Institute of Digital Evidence - <http://www.appyide.org>

### **Get Involved!**

There are tremendous opportunities here beyond your coursework. The student chapter of AIDE (Appalachian Institute of Digital Evidence), internships, CCDC, and research are just some of the possibilities. Involvement in these activities is what can separate your resume from the others. Do not miss this opportunity. See me for details.

### **NOTES::**