



DIGITAL FORENSICS  
INFORMATION ASSURANCE

## Integrated Science & Technology 447

### Applied Digital Evidence and eDiscovery Course Syllabus

**Fall 2014**

**MWF 1:00 – 1:50**

**Lab – Weds 2:00 – 2:50 ML 121**

**Morrow Library 121**

**Instructor** – John Sammons

**Office** – Prichard Hall 208

**Office Phone** – 304-696-7241

**eMail Address** – john.sammons@marshall.edu

**Office Hours:**

Monday 10:00am – 11:00am

Tuesday 10:00am – 11:00am

Wednesday 10:00am – 11:00am

Thursday 10:00am – 11:00am

Friday 10:00am – 11:00am

**Textbook**

*EnCase Computer Forensics*. Steve Bunting; Sybex; (September 11, 2012). 978-0470901069

**Course Description**

In IST 447 will closely examine common Windows artifacts and the forensic examination of Macintosh computers. They study the electronic discovery process from end to end along with the fundamental legal requirements and case law.

**Credit**

The course is three (3) credit hours and WI.

**Pre/co-requisites**

IST 264 Technology Foundations

IST 449 Data Recovery and Analysis

**Course Learning Objectives**

<b>Course Student Learning Outcomes</b>	<b>How students will practice each outcome in this Course</b>	<b>How student achievement of each outcome will be assessed in this Course</b>
Students will effectively <b>explain</b> the function of key Windows and Mac forensic artifacts.	PowerPoint/Prezi development, peer & instructor review, journal assignments, Quizlets,	Presentations, Quiz questions, concept map, high stakes writing assignment, “hot seat” quizzes
Students will correctly <b>apply</b> the phases of the EDRM in civil litigation.	Case studies and practical exercises, journal assignments, Quizlets	Presentations, Quiz questions, concept map, high stakes writing assignment, “hot seat” quizzes
Students will <b>demonstrate</b> their ability to communicate effectively both orally and in writing.	PowerPoint/Prezi development, peer & instructor review, journal assignments, Quizlets	Presentations, Quiz questions, concept map, high stakes writing assignment, “hot seat” quizzes
Students will correctly <b>apply</b> the phases of the EDRM in civil litigation	Case studies and practical exercises, journal assignments	Presentations, Quiz questions, concept map, high stakes writing assignment, “hot seat” quizzes
Students will correctly <b>interpret, locate, preserve, collect, analyze,</b> and <b>interpret</b> common Windows artifacts as they relate to the facts and circumstances of a particular investigation.	Journal exercises, in-class team assignments, Quizlets, Practical exercises, journal assignments	Quizzes, “hot seat” quizzes, 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.	Module concept maps	Mid-Term & Final Concept Maps

## Instruction Method

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 and “flipped classroom” 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.

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.

## Lab

There is a lab with this course. It meets on Wednesday from 2:00 – 2:50 in ML 121. Lab exercises will generally compliment/coincide with the material covered during lectures. Unless otherwise stated, all lab assignments will be submitted through Bb. You are asked to please be on time for the lab session (if not a little early). We only have 50 min and it will take some time to get the software/VM’s started/configured. You should bring your AccessData Academic Manual (from IST 449) with you to lab.

## 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 Map)	200
Projects & Assignments	200 (Approx. Subject to change based on progress)
Learning Journals	330 (Approx. Subject to change based on progress)
Quizzes	200 (Approx. Subject to change based on progress)
Lab Assignments	200 (Approx. Subject to change based on progress)
<b>Total</b>	<b>1200</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 Bb. 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)

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 A 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 (among other things), there will be no second chance. Your penalty is that you will receive 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 BEGINNING OF CLASS** on their due date. **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 instructor's University email address will serve as the secondary means of submission. Bb email is the last method of submission. Should submission prove to be impossible, students are expected to leave a voice mail on the Instructor's 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.

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. Each module will have its own quiz.

*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 catch up on material missed, and it will not be the responsibility of the instructor to catch you up on material missed during office hours, or re-lecture to you. 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. Exit slips in the learning journal are one example.

### **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 as well as 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. 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. Written communication with me must also be professional. You are expected to follow the guidelines in the "How to Email My Professor" article.

### **University Holidays & Key Dates**

#### **September 1, Monday**

Labor Day – University closed

#### **October 14, Tuesday - October 17, Friday**

Midterms

#### **November 24, Saturday – November 29, Friday**

Thanksgiving/Fall Break – Classes Dismissed

#### **November 27, Thursday – November 28, Friday**

Thanksgiving Holiday – University Closed

#### **December 1, Monday**

Classes Resume

**December 5, Friday**

Last Day to Drop

**December 1, Monday – December 6, Saturday**

Dead Week

**December 5, Friday**

Last Class Day

**December 6, Saturday – December 12, Friday**

Final Exams

**December 23, Tuesday – January 1, 2015**

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

**Technical Competencies**

Students are expected to be proficient working with AD Forensic Toolkit, FTK Imager, Registry Viewer, Password Recovery Toolkit, and Microsoft Office products or their equivalent. In addition, students will need an application to create concept maps. VUE, from Tufts University is the recommended tool for this purpose. It's 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. 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. It could vary based on class progress and performance.

<b>Week</b>	<b>Dates</b>	<b>Lecture Topics</b>	<b>Reading</b>
1	Aug 25 - 29	Intro, Module "0" Data Storage	TBD in Bb
2	Sept 1 - 5	Data Storage	Chap 1, Pg 325 – 337, Pg 436 - 438
3	Sept 8 - 12	Forensic Analysis/File Systems	Chap 2
4	Sept 15 - 19	File Systems	Chap 2
5	Sept 22 - 26	Registry	Pg 595 – 596, Bb
6	Sept 29 – Oct 3	Registry/Windows Artifacts	Chap 9
7	Oct 6 - 10	Windows Artifacts	Chap 9
8	Oct 13 - 17	Midterm	N/A
9	Oct 20 - 24	Anti-Forensics	Bb
10	Oct 27 - 31	Ethics	N/A
11	Nov 3 - 7	eDiscovery	Bb
12	Nov 10 - 14	eDiscovery	Bb
13	Nov 17 - 21	Intro to Malware	Bb
14	Nov 24 - 28	Fall Break	Bb
15	Dec 1 - 5	Macintosh Forensics	Bb
16	Dec 8 - 12	Finals	N/A

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 writing intensive 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 as a single document. Do NOT procrastinate. The journals are graded **ALL OR NONE**. If you complete all entries, you will receive full credit. **ANY** missing entries will result in a 0.

You will need your journal during almost every class therefore you must ensure it's available when you need it. It is your responsibility to ensure that it's 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. Generally there will be a quiz for each module. 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 responses. Please read and follow the guidelines outlined in the "How to Email Your Professor" article. 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.

There is a great deal of information in Bb regarding the conduct of the course, additional resources, etc. You are expected to read and navigate through this material.

### **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. While in class, you will be expected to work on class related materials/assignments. Please do not surf the Internet and work on other assignments unless authorized by the instructor.

### **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, 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::**