IS 3640 – Computer Forensics (3 credit hours)

Paul R. Carter College of Business Administration

MISSION STATEMENT

University Mission Statement: *"Harding's mission is to provide a quality education that will lead to an understanding and philosophy of life consistent with Christian ideals."*

College Mission Statement: *"To prepare Christian business professionals for lives of service."*

COURSE INFORMATION

Prerequisites / Co-requisites: IS3050

Catalog Description: In this course, you will learn the principles and techniques for digital forensics investigation and the spectrum of available computer forensics tools. You will learn about core forensics procedures to ensure court admissibility of evidence, as well as the legal and ethical implications. You will learn how to perform a forensic investigation on both Unix/Linux and Windows systems with different file systems. You will also be guided through forensic procedures and review and analyze forensics reports.

Part of Term/Semester, Year, Location: Fall

INSTRUCTOR INFORMATION

John Stone
Assistant Professor of Information Systems
Paul R. Carter College of Business Administration

INSTRUCTOR CONTACT INFORMATION

jstone@harding.edu
915 E. Market Ave
Box 10774
Searcy, AR
Mabee Building 244B
Office: 501.279.4430
Cell: 501.593.8440 (except for emergency, please do not call or text after 9 p.m. CST)

COURSE COMMUNICATION

If you need to email me about the course, please use Canvas' email. My goal is to reply to your communication within one (1) business day. If it is a holiday or a weekend, please keep in mind that a business day may mean more than one (1) day. If you need to reach me sooner, I would recommend a phone call.

ADDITIONAL COMMENTS FOR THIS COURSE

All course assignments, exams, etc., will be conducted within Canvas. You may be required to take exams in the testing center.

INTEGRATION OF FAITH AND LEARNING

In discussing the area Computer Forensics any other activity, however, without seeking the guidance and favor of God, none of our plans will amount to anything. He, alone, is why we are competent to do anything (Psalm 20:7, James 4:13-15, John 15:5).

In the discipline of cybersecurity, where there is so much in the shadows and we truly are battling against "evil", we need to be spiritually prepared. Weekly reflection opportunities will focus our attention to this reality.

REQUIRED MATERIALS
A Practical Guide to Computer
Forensics Investigations
Hayes
ISBN: 9780789741158

A basic calculator will be required. For this class, a smartphone app should be sufficient. You may purchase the textbook from the Harding University Bookstore, Amazon, etc.

The course text was selected because it is in alignment with the relevant components of the Comp TIA Security + for fundamentals, and Comp TIA CSA+for Forensics.
SUPPLEMENTAL MATERIALS

There may be supplemental materials (e.g., journals, articles) that serve to provide additional coverage of lecture topics. Any such required supplemental materials will be provided in Canvas (or linked) and will be clearly noted in the appropriate Module.

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CANVAS

Canvas is the learning management system (LMS) used by Harding's courses. For additional information relating to Canvas, including tutorials, please visit Harding's IST Canvas page or Instructure Canvas Help Center.

CANVAS, INTERNET or TECHNOLOGY OUTAGE

As a student, you must be able to manage technical difficulties, as power outages, connection problems and other technical issues are always a possibility. Technology will sometimes fail; for this reason, it is advisable to complete your assigned work prior to the due date.

Instructor - If your instructor experiences a power outage, an Internet service outage, an LMS (Canvas) or other technical issue that significantly affects assignments, the ability to grade assignments, or the instructor/student communication channel is significantly disrupted, adjustments to due dates will be made, as appropriate..

TECHNICAL SUPPORT

 For Canvas related technical assistance or to report a problem, Harding's e-Learning Help Desk is available Monday - Friday between 8:00 a.m. – 5:00 p.m. CST.
Phone: 501-279-5201
Email: elearning@harding.edu Website: www.harding.edu/elm

Again, please remember that your instructor should be your first point of contact.

UNIVERSITY ASSESSMENT

Harding University is wholeheartedly committed to full compliance with all criteria of the Higher Learning Commission of the North Central Association of Colleges and Schools, the university accreditation agency. The university values continuous, rigorous assessment at every level for its potential to improve student learning and achievement and for its centrality in fulfilling the stated Mission of Harding University.

In addition to the university compliance with North Central Association, the College of Business Administration adheres to the standards of assessment set forth by the Association of Collegiate Business Schools and Programs (ACBSP), a business departmental accreditation agency. ACBSP focuses on teaching excellence in the classroom and high academic standards throughout the business programs. As such, the College of Business is dedicated to compilation and analysis of assessment data for the purpose of maximizing student learning in all of the business programs.

Assessment is becoming more important in all aspects of the operation of Harding University. The university provides programs that enable students to acquire essential knowledge, skills, and dispositions in their academic disciplines for successful careers, advanced studies, and servant leadership. There is a good probability that what you learn in this course will be assessed in broader measures of student achievement such as standardized exams and/or licensing exams. The ultimate goal of assessment is that Harding University will become a stronger institution of higher learning.

As a part of the assessment process, the following learning outcomes are present.

BA in Cybersecurity PROGRAM LEARNING OUTCOMES (PLO)

Students will:

1. Evaluate the computer network and information security needs of an organization.
2. Assess risk and create **cybersecurity risk management policies** in order to adequately protect an organization's critical information and assets.
3. Implement appropriate tools to **prevent, detect, react, and recover from cyber-attacks**.
4. Analyze and create different **forms of attack**
5. Demonstrate understanding of the **legal** and technical aspects of a cybercrime investigation and the application of **computer forensic tools**
6. **Integrate knowledge** from other disciplines, such, criminal justice, psychology, politics and human factors, with their technical expertise to devise and communicate practical solutions to cybersecurity issues
7. Explain how **ethical issues** impact decision making in the cybersecurity area
8. Conduct cyber activities in an **Ethical, Social, and Professional Manner**

COURSE LEARNING OUTCOMES (CLO) and their relationship to PLO's

Students will:
1) Understand best practices for forensic activities. (PLO 5, PLO 8)
2) Review the literature related to forensics as it relates to the challenges and opportunities in the field. (PLO 2, PLO 5)
3) Understand the tools and techniques used in modern digital forensics. (PLO 6)
4) Discuss and identify the various ethical and legal issues related to the field. (PLO 7, PLO 7)
5) Demonstrate an understanding of documentation of an investigation as a team. (PLO 3-5)

COURSE REQUIREMENTS

Hands on Forensics Tools Assignments (10%): Activities to help walk the student through the understanding of the modern digital forensics tools and techniques.

Case Studies (50%): Weekly work discussing either case studies or literature relative to the field of forensics.

Documentation of an Online Investigation Paper (40%): The primary deliverable for the course. This assignment pulls together all the other elements of the course and prepares students for similar tasks in the workplace.

Details relating to each individual course requirement and how you will be assessed (e.g., Homework, Case Applications) can be found in Canvas. Please review the individual modules area for details relating to each course assessment.

GRADING POLICY

The student will be provided weekly feedback during the duration of the course. This may be in the form of narrative information and/or component grades, and will be provided in Canvas' Gradebook. It is possible that supplemental feedback may also be provided in Canvas' email. However, the intent of this feedback is to inform the student of how well expectations for these components have been met.

Component details may include, but are not limited to, the following: exams, mid-term, quizzes, case studies, current events, projects, research papers, presentations, and participation.

The final grade will be computed as a weighted average of Total Points Earned/Total Points Possible and reflected as a letter grade.

Letter Grade Guideline

Letter Grade	Average Threshold	Points
A (Excellent)	90%	900-1,000
B (Good)	80%	800-899
C (Average)	70%	700-799
F (Failure)	<70%	<700

From time to time, an individual may inquire about extra credit and other ways to pull their grade up. There will not be a formal extra credit project, assignment, etc. Once the final grade has been calculated, the course is over and no further work will be accepted for grading. Therefore, any requests to complete special assignments or projects in an effort to change one's posted grade cannot be honored. If at the end of the class after all assignments have been graded you have accumulated a fraction of a point (e.g., 899.50 points), your total number of points will be rounded to the nearest whole point using the standard rounding rules. For example, 899.50 points will be rounded to 900 points and reported as an "A," but 899.49 points will be rounded to 899 points and reported as a "B." Additionally, a curve will not be applied to individual assignments (i.e., 10 points will not be added to everyone's score if the high score is 90 points earned out of 100 points possible).

Attendance/Participation

Professionalism Component – I expect your performance as a student to be conducted in a professional manner. At the end of the term I will assess your professionalism based on your performance in the following areas:

Attendance in this course is vital to your success. Someone has once said, "Eighty percent of success is showing up." While I'm not sure that the percentage cited has been statistically verified, I am sure that the sentiment expressed is exactly correct. Every class session is important as there will be items from each class that will contribute to your final grade. Being able to not only fill a seat but also contributing to the course is expected.

Just as employers expect employees to be available for work every day, you are expected to be present for every class period during the semester. Missing class is something that should not occur unless you are ill (as evidenced by a visit to the Student Health Center or doctor), or you are participating in a school sponsored trip. In the case of ANY absence, you must notify me BEFORE the start of class either by email or phone call. If you do not notify me in advance of the class period you expect to miss, the absence will be considered UNEXECUSED. If you miss a test as a result of an unexcused absence, it will result in a score of zero (0) points. No make-up tests will be given. One final note: after six (6) unexcused absences, your Instructor has the discretion to drop you from the course with an "F" grade.

It should also be noted, being physically present for each class is no guarantee of success: students must "Be Here, Now" – fully engaged in the classroom discussion.

Missed/Late Assignments – Employees know that failing to complete assigned work, or turning in assigned work after it is due is not tolerated by employers. Repeated failures to produce quality work in a timely manner typically results in termination of employment. As students, your "workplace" is the classroom. Reading Quizzes and Homework Quizzes will be your assigned "work" each week. These quizzes are designed to reinforce the learnings from the assigned reading and homework problems. Further, concepts learned in each chapter are fundamental to the material presented in subsequent chapters. Missing any component along the way will lead to gaps in student knowledge, making it more difficult to understand new material being presented.

Unless otherwise directed, it is expected that ALL assigned work will be completed by the due dates shown in the Canvas Classroom. To receive maximum credit, students are responsible for completing and submitting assignments prior the due dates. For any late work, point penalties begin immediately after the due date is passed. No late submissions will be accepted after the start of the next class meeting, i.e., assignments due on Thursday will not be accepted after the start of class the following Tuesday. Assignments and projects may be submitted late at the Instructor's sole discretion. If accepted, a late penalty equal to 20% of credit available for that deliverable, unless specified otherwise herein. In some cases, it may not be possible to grade late work in time to be returned to the student by the end of the semester.

Tardiness– Being late for appointments is something that is not acceptable in the workplace. It is not acceptable to be tardy to class either. If you are going to be late, please enter the classroom and take your seat in a way that will not disrupt the class. Immediately following class, you need to explain why you were late to instructor.

PLEASE NOTE: As your Professor for this course, you expect my behavior to be professional at all times. At the same time, I expect your behavior to be professional during the class

period. My commitment to you is that I will be in class, on time, and prepared for each and every class period. If for some reason I will not be in class on a given day, I will notify you prior to class via e-mail. Also, I will be in my office and available for questions during my office hours (see under CONTACT INFORMATION above). Finally, I commit that I will respond to all e-mail questions within 24 hours 99% of the time.

Exam Policy

Each student must take the exam during the regular exam time. No makeup exams will be given for any reason. Students that miss an exam must notify the instructor PRIOR to the exam time to receive the right to apply the missed exam points to the final. Exams missed for unexcused reasons or failure to notify the instructor prior to the exam will receive a grade of zero

Deadlines/Late Policy

Students are encouraged to work ahead of deadlines. The deadline for any given assignment represents the date from which points will be taken off for being late. It is important that the posted deadlines for a given assignment are met. Assignments turned in after the deadline will be charged a 25% per day late penalty. Therefore, no assignment may be turned in after four days have passed from the original deadline. As business students, you are held to a high standard. While this policy may seem harsh, what would happen if you missed a deadline at work (yet alone by four days)? No assignment will be accepted after the ending date of the class has passed.

There are exceptions to the rule above. If there is a problem and you are unable to meet a deadline, the onus is on you, the student, to communicate with the instructor in a timely fashion. If you are ill and cannot meet a deadline, you are responsible for contacting the professor before the deadline, not after it passes. After all, if you were too ill to go to work, you wouldn't call-in the day after you failed to show up to work. If you will be traveling for work, have an illness, family problems, a vacation scheduled, etc., please contact your instructor in advance. If an exception is granted, there must be an agreement between the instructor and the student on a mutually agreeable due date for the missed assignment(s).

Writing Style/Referencing

As the accepted writing style of business, psychology, education, and social science programs across the globe (American Psychological Association, 2014), the American Psychological Association publication format (otherwise known as APA Style) is the required writing style for all students.

Learning to conduct scholarly research is a natural part of academic work, and will help you succeed at Harding University. Conducting scholarly, professional and industry research is required for this course. If a source is questionable, e.g., Wikipedia, other wikis, ask.com, answers.yahoo.com, etc., please contact your professor for clarity and permission before

using a source that falls outside the scope of traditional academic standards, especially at the level. It is also important that you show how these references assisted your academic work. So, make sure you reference your sources in every assignment you submit, no matter how mundane the assignment may be. Failure to properly and completely cite your sources may constitute plagiarism or cheating, as delineated in the Academic Code of Conduct. Bottom line, remember these two simple rules: 1) give credit where credit is due, and 2) if it isn't your words, ideas or thoughts, it is someone else's and needs to be cited. The following two websites may be of value to you.

APA Resources
Purdue Online Writing Lab

Turnitin

During this course, the originality of various assignments submitted by students will be checked via Turnitin, an organization leading the way in both plagiarism detection and student learning. Turnitin provides institutions, faculty, and students with a variety of academic tools, including originality checks, online grading capabilities, and even peer reviewed feedback. Turnitin is integrated with the assignments settings used by the instructor when preparing assignments in Canvas.

Student Declaration

Submitting an electronic document at Harding University constitutes an agreement with the following declaration:

- I affirm that the work submitted is of my own accord, is original, and contains the necessary and appropriate citations, where the work is of another source.
- I affirm that this assignment has not previously been submitted in any form.
- When submitting assignments to Turnitin, I acknowledge and adhere to its disclaimer statements.
- I affirm to uphold Harding University's Code of Academic Integrity.

RESERVATION STATEMENT

The instructor reserves the right to modify and update any part of the syllabus where necessary. It is your responsibility to stay up to date with any changes communicated by the professor.

INSTITUTIONAL POLICIES

Code of Academic Conduct

Students of Harding University are expected to be honorable and to observe standards of academic conduct appropriate to a community of Christian scholars. Harding expects from its students a higher standard of conduct than the minimum required to avoid discipline. All acts

of dishonesty in any academic work constitute academic misconduct. This includes, but is not necessarily limited to, the following:

1. *Cheating*: Use or attempted use of unauthorized materials, information or study aids in any academic exercise.

2. *Plagiarism*: Representing the words, ideas or data of another as your own in any academic exercise.

3. *Fabrication*: Falsification or unauthorized invention of any information or citation in an academic exercise.

4. *Aiding and Abetting Academic Dishonesty*: Intentionally helping or attempting to help another student commit an act of academic dishonesty.

5. *Conduct unbecoming a professional while participating in a practicum, internship, field experience, or any similar academic experience*: Conduct unbecoming a professional includes, but is not limited to, standards of conduct stated in the general Harding University catalog as well as standards and codes of conduct associated with professional organizations related to the student's academic discipline.

6. *Respect*: Students are expected to respect other classmate's opinions and ideas at all times. Since students cannot see body language and other non-verbal cues, it is essential that comments be worded carefully and refrain from such things as sarcasm, which can be taken negatively in the on-line world. Read posts for content and then read posts for context. If the message can be taken negatively in any way, the suggestion is to re-word the post until you are sure that it will not be taken defensively. Another key issue is to refrain from certain discussions that evoke strong reaction. This may include such things as:

> -Stereotypes of any nature, whether it be profession or class of people
> -Politics

7. *Lurking*: Lurking is when a student signs on and reads the messages and does not post to the classroom. There are many reasons why a student may do this. Some students may feel uncomfortable sharing views in an open forum, may be unsure of the materials being covered, and/or may not want to say the same or similar things that other students have already posted. Discuss these issues with your instructor. Posting 4 out of 7 days is essential to learning and to passing an on-line class. Lurking is not counted as participation and will only lower your grade. Your instructor may be able to assist you in overcoming or resolving any issue that may drive lurking behavior.

8. *Drifting*: Drifting occurs when the discussion goes in another direction than expected. Drifting is normal and encouraged in the on-line environment. However, the drifting must be related to academics and the materials discussed in the classroom. The instructor will encourage positive drifting, but will discourage inappropriate drifting and may ask students to take it to the CHAT room or to discuss it through personal email. Inappropriate drift will not be counted toward the participation grade.

Accommodations/Students with Disabilities

It is the policy for Harding University to accommodate [students with disabilities](#), pursuant to federal and state law. Therefore, any student with a *documented disability* condition (e.g. physical, learning, or psychological) who needs to arrange reasonable accommodations must contact the instructor and the Disabilities Office at the *beginning* of each semester. (If the diagnosis of the disability occurs during the academic year, the student must **self-identify** with the Disabilities Office *as soon as possible* in order to get academic accommodations in place for the remainder of the semester.) The Disabilities Office is located in Room 219 in the Student Center at the Searcy Campus.

Academic Grievance Policy

If a student believes that he or she has reason to question the decision of a faculty member with regard to the final grade received in a course or the unreasonable denial of academic progression, a procedure has been established to resolve the grievance. The student must register his or her complaint in writing to the faculty member within seven business days following the alleged incident, except that if the grievance involves a final grade, it must be filed within ten business days after final grades are posted by the Registrar. Within the written complaint, the student must set forth reasons and grounds for the grievance. The policy set forth in the catalog titled [Academic Grievance Procedure](#) establishes the procedures for such grievance resolution. All students should be familiar with this policy.

Time Management Expectations/Credit Hour Calculator Statement

All courses at Harding meet federal and HLC regulations and meet or exceed university requirements regarding credit hours.

For every course credit hour, the typical student should expect to spend at least forty-five clock hours of concentrated attention on course-related work, including but not limited to time attending class, as well as out-of-class time spent reading, reviewing, organizing notes, preparing for upcoming quizzes/exams, problem solving, developing and completing projects, and other activities that enhance learning. Thus, for a three-hour course, a typical student should expect to spend at least one hundred thirty-five hours dedicated to the course.

Additional Academic Policies

For additional academic policies like course load, changes in registration, incomplete, withdrawal, types of course offerings, please see the following [Academic Information](#).

INSTITUTIONAL ACADEMIC SUPPORT SERVICES

Harding offers a wide variety of academic support services. While this list is not all-inclusive, the following links may be useful to students (some services may not be applicable for students):
[Library](#)
[Testing](#)

Last Revised: 12/8/2019

Tutoring
Writing Lab

INSTITUTIONAL STUDENT SUPPORT SERVICES

Harding offers a wide variety of student support services. While this list is not all-inclusive, the following links may be useful to students (some services may not be applicable for students):

Advising
Registration
Financial Aid
Student Life
Counseling
Career Services (Center for Professional Excellence)
Seminars/Workshops

References

American Psychological Association. (2014). Retrieved from
    https://www.apa.org/about/apa/archives/apa-
    history.aspx

byuicurdev. (2012, June 12). *Discussion board netiquette* [Video file]. Retrieved
    from https://www.youtube.com/watch?v=DwdqQjCfWSc

Quality Matters (QM) Higher Education Rubrics. (2014). (5th Ed). *Quality Matters*.
    MarylandOnline, Inc (this document is only available to subscribers of Quality Matters)