Mount Saint Mary College

Instructor:
Denise McCarroll

Division:
Division of Mathematics and Information Technology

Semester & Year:
Spring 2022

Class Schedule:
Online

Contact Information:
845 569-3392
Denise.McCarroll@msmc.edu

Office Location
Aquinas Hall, Room 50D

Office Hours
10:10 – 11:35 Monday | Wednesday | or by Appointment via Zoom

Course: **CYB 4670 01 OL Digital Forensics**

Required Text/Course Materials
We will be using an e-text not a bound hard copy. Further details provided in class.

Required Text/Course Materials
Guide to Computer Forensics And Investigations, 6th Edition
Bill Nelson, Amelia Phillips, and Chris Steuart

This text is available via e-text once a student purchases access to the associated Cengage MindTap Course.

Course Pre/Co-Requisites:
CIT 2300 and CIT/CYB 2550

Resource Materials/Links

- **MindTap Courseware**

- **In order to access this course, a Cengage Link will be located in the CYB 4670 e-Class area. Students will purchase an access code by clicking on the link and then, follow the prompts.**

- **Once access is available, each week students will use ONLY the Cengage Link via their e-Class accounts to enter the course. Weekly Announcements are located in MindTap.**

Technological Requirements and Recommendations:

Recommendations	Support
Recommended Internet Browsers: • Google Chrome ONLY **Use of Mobile Devices:** While you may be able to conduct most work on a mobile device (e.g. smartphone, tablet), it is highly recommended that you do all course work on a desktop or laptop computer.	**IT Support Center:** The IT Support Center is here to assist you with your general technology needs. To obtain technology support, please visit https://helpdesk.msmc.edu/support/ to submit a ticket or email it.support@msmc.edu.

• *Always: Enable Popups* • *Always use Google Chrome* • *Always Clear your History after each session of MindTap use*	Most Cengage Programs are Windows based. Those students using MAC's may need to search for equivalent key presses when completing assignments.

If a student does not have a personal device that can accommodate the course material, it is their responsibility to either complete the work on campus or discover another method to complete the material.

Working Remotely:

Also, if you need access to computers on campus from a remote location, you can refer to the MSMC portal, "Working Remotely" to download a virtual desktop interface. This interface will allow you to use Windows based programs. If you need assistance with this, contact the IT Department for step by step instructions. In addition: students can access their H Drive from the VDI.

One USB-Flash – 2 GB or higher - this is your backup in the event your system crashes! You can use the MSMC H:\ for saving and email yourself attached files if you prefer not to purchase a USB for backups, but it is strongly recommended that you do have a USB.

Course Description/Scope:

This course focuses on the use of the most popular forensics tools and provides specific guidance on dealing with civil and criminal matters relating to the law and technology. Includes discussions on how to manage a digital forensics operation in today's business environment.

Virtual Meetings:

The instructor is available via Zoom every week by appointment up request. Zoom Links will be provided via e-Class Zoom Links. Also, please sign up for MSMC Alerts to be notified of weather-related closures.

Course Objectives:

• Understanding the Digital Forensics Profession and Investigations

• The Investigator's Office and Laboratory

• Data Acquisition

• Processing Crime and Incident Scenes

• Working with Windows and CLI Systems

• Current Digital Forensics Tools

• Linux and Macintosh File Systems

• Recovering Graphics Files

• Digital Forensics Analysis and Validation

• Virtual Machine Forensics, Live Acquisitions, and Network Forensics

• Email and Social Media

• Mobile Device Forensics

• Cloud Forensics

• Report Writing for High Tech Investigations

• Expert Testimony in High Tech Investigations

Ethics for the Investigator and Expert Witness

Course Outcomes:
Upon completion of this course, students will be able to:

1. Describe concepts, technologies, components, and issues

related to Digital Forensics

2. Using virtual environments via Cengage, interact with

tools to observe traffic flow, and apply Digital Forensics techniques

3. Understand the complete process from the beginning of an investigation to it culmination

4. Describe common tools used for Digital Forensic investigations

Associated Learning Resource:
- Lecture - video lectures, MindTap Videos, quizzes, Reading assignments via e-Text

Course Schedule or Calendar:

A Course Calendar is provided in the MindTap course site. It is the student's responsibility to be aware of all assignment due dates and deadlines as outlined in MindTap. While I will make every effort to avoid changes, I, as the instructor, reserve the right to amend the Course Assignments per the needs of the class. Any changes to deadlines will be communicated via e-Mail and in MindTap.

Week	Topics	Chapter Readings	
1	Introduction, Syllabus Understanding the Digital Forensics Profession and Investigations	Chapter 1	Labs, Reading Assignments, Quizzes, Weekly Assignments
2	The Investigator's Office and Laboratory	Chapter 2	Labs, Reading Assignments, Quizzes, Weekly Assignments
3	Data Acquisition	Chapter 3	"
4	Processing Crime and Incident Scenes	Chapter 4	"
5	Working with Windows and CLI Systems	Chapter 5	"
6	Current Digital Forensics Tools	Chapter 6	"
7	Linux and Macintosh File Systems	Chapter 7	Midterm Exam
8	Spring Break		
9	Recovering Graphics Files	Chapter 8	Labs, Reading Assignments, Quizzes, Weekly Assignments
10	Digital Forensics Analysis and Validation	Chapter 9	"

11	Virtual Machine Forensics, Live Acquisitions, and Network Forensics	Chapter 10	"
12	Email and Social Media Mobil Device Forensics And Easter	Chapter 11 Chapter 12	"
13	Cloud Forensics	Chapter 13	"
14	Report Writing for High Tech Investigations Expert Testimony in High Tech Investigations	Chapter 14 Chapter 15	"
15	Ethics for the Investigator and Expert Witness	Chapter 16	Final Exam

Grade Distribution:

Labs 15%	Case Lab Quizzes 20%
Module Quizzes 10%	Post Assessment 10%
Midterm 20%	Final 25%

Note: **Students are required to understand how grades are calculated. This means that if a student completes all assignments with a high score, those assignments are only part of the total class grade.**

The Midterm and Final account for the rest of the final grade. Therefore, please note that I do not offer extra credit for students who fall behind, and nor do grades get bumped up. For example: if a student receives a total grade of 89.99%, that represents a B+. In order to receive a higher score, it must be earned as stipulated below.

Distributing Grades:

All assignment **grades will be posted to our MindTap gradebook** within 3-5 days of the assignment due date. I will make every attempt to provide personalized verbal/written feedback in the gradebook to compliment a numerical grade, when and where it is applicable. I will not discuss grades or give assignment feedback via email. Please make a Zoom or in-person appointment with me to discuss a grade.

Grading Criteria:

A 95-100%	B- 80-82%	D+ 67-69%
A- 90-94%	C+ 77-79%	D 63-66%
B+ 87-89%	C 73-76%	F 62% or below
B 83-86%	C- 70-72%	

Class Policies:

1. **No make-up exams** will be given unless the absence is documented for medical reasons or for a valid family emergency, which also requires documentation.

2. Assignments will be announced online and posted in MindTap. Weekly assignments are due according to the due dates listed on the Cengage website. The student is responsible for staying up to date on all due dates and submitting assignments, etc., on time. **No exceptions**.

3. If you are absent from class, even for a valid reason, you are responsible for all missed work. Class information will be available via e-Class/Cengage Link. Students can check MindTap for updated information and or consult with a trusted friend.

4. **Students are expected to review the course resources and READ the e-Text assignments each week**.
Video lectures will be provided and will address the highlights of the topic for that week. Important material from the text and outside sources will be covered.

Late Work/Make-Up Policy:

All assignments are due by the deadline outlined in MindTap. All times are Eastern Standard Time (EST). If you are in a different time zone, please adjust your submittal time accordingly. Any late work submitted *without* previous communication regarding conflict with a deadline and/or a previous agreement with the instructor per the attendance policy above will result in **a 5-point deduction** per day from the assignment grade. However, other than excused absences, no late assignments will be accepted.

Instructor and Student Communication:

I will be using MindTap and e-mail to communicate all course updates/reminders, usually on a weekly basis. As mentioned above, I will also send out links to our Zoom live meetings when and if they occur in this way. Please pay close attention to all communications in MSMCs email account.

I will make every effort to return all email messages and respond to within 24 hours on weekdays. **If you send communication after 8pm, or on a College holiday, I will respond the next business day.** You are expected to use your MSMC email account for all email exchanges. I will not respond to email addresses that do not end in @my.msmc.edu.

IMPORTANT: **Please label your class section # in the subject area of all emails**. See above sections and times if you are not sure of your section #. Make sure to send emails using Mount's email id. **Denise.McCarroll@msmc.edu**

Expectations for Course Collaboration and Active Learning:

Discussion and the exchange of ideas are essential to academic work, and particularly important for the success of the whole class when working online. For assignments in this course, you are encouraged to consult with your classmates (through phone, email, and Zoom) to share sources. To encourage social distancing, I highly recommend collaborating with peers remotely/online whenever possible. When collaborating online, it is the student's responsibility to practice good etiquette and demonstrate respect in all interactions and collaborations with students and instructor(s).

Participation In-Class and Online:

Whether coming to class, attending meetings via Zoom, or participating on e-Class, students are required to maintain an active and engaged presence throughout the duration of the course. Students are expected to attend each class meeting in-person or via Zoom. Attendance will be tracked (see Attendance Policy). Since a large portion of your coursework will be done online, it is important to also define what participation means in this setting. Mount Saint Mary College defines active participation in an online setting as:
- Student submission of an academic assignment;
- Student submission of an exam;
- Documented student participation in an interactive tutorial or computer-assisted instruction;
- A posting by the student showing the student's participation in an online study group that is assigned by the instructor;
- A posting by the student in a discussion forum showing the student's participation in an online discussion about academic course material;
- An email from the student or other documentation showing that the student did initiate contact with an instructor to ask a question about an academic subject studied in the course.

Simply logging in to the e-Class course and viewing materials will not be considered active participation.
Failure to participate in any of the ways defined in this Syllabus before or on the AW date listed below may result in your instructor submitting an academic withdrawal (AW) from the course. Please note that failure to actively participate in this course could impact your eligibility for Financial Aid.

Social Distancing Guidelines:

For in-class meetings, students and instructor should follow the social distancing guidelines provided by the CDC in response to COVID-19. These include creating at least six feet of distance between yourself and others, wearing face coverings, and frequent hand washing/sanitizing. The College is committed to helping arrange campus spaces in accordance with these guidelines, but please take

an active role in in ensuring the health and safety of yourself and others by selecting seating that is at least six feet from another person and wearing a face covering to class. Please read more of the CDC's guidelines here.

College Policies:

Students are responsible for complying with all policies in the Student Handbook, including the Academic Honesty Policy.

As a member of the Mount community, I AGREE to take cooperative steps to protect the health and safety of every member of our campus and local community during this global pandemic. Furthermore, I recognize that my efforts keep me, and those with whom I live and learn, safer and healthier. I understand that my personal and academic success are dependent on staying healthy and agreeing to shared behavioral practices – wearing a face covering, maintaining sanitized work areas, and social distancing across campus – that will keep me and other members of the College and local community protected from illness. **I AGREE** to invite others to participate with me in our mutual responsibility to sustaining the health and wellbeing of our cherished community.

ACADEMIC HONESTY POLICY:

The mission of Mount Saint Mary College is concerned with "…the development of sound values, goals and commitments on the part of students. Equipping students to play responsible roles in society has been a consistent aim of our institution." Instances of academic dishonesty subvert the mission of the College and the experience students derive from it. These instances harm the offender as well as students who maintain academic honesty. The Mount community, therefore, commits itself to do all in its power to prevent such dishonesty and imposes impartial sanctions upon those who harm themselves, their fellow students and the College in this way.

***Definitions*:**
Generally, academic dishonesty may be defined in the following ways:

   a. Cheating: using or attempting to use, giving or attempting to give, unauthorized materials, information, assistance or study aids in any academic exercise or evaluation (tests), unless the nature of the academic exercise legitimizes cooperative learning;

   b. Plagiarism: copying or imitating the language, ideas or thoughts of another person, and passing off the same as one's original work;

   c. Falsification: forgery, alteration or misuse of academic documents, records or forms.

For additional information, please go to the Student Handbook located on www.msmc.edu under *Student Services*.

Student Support Services Counseling Services

Counseling Services (https://www.msmc.edu/Student_Services/Counseling):

Many students face personal challenges or have psychological needs that may interfere with their academics, social life, or emotional well-being. MSMC Counseling Services offers a variety of confidential services to help students through difficult times including counseling, crisis intervention, consultations, and mental health screenings. Counseling Services can be reached at counseling@msmc.edu.

Disability Services (https://www.msmc.edu/Student_Services/Disability_Services):

It is the policy of Mount Saint Mary College to accommodate students with disabilities in accordance with federal and state laws. If you, as a student with a disability, have difficulty accessing any part of the course materials or activities for this class, please notify the instructor immediately. Accommodations for test-taking should be arranged in advance. Students with disabilities are encouraged to contact the Disability Services Office as soon as possible so that appropriate accommodations can be determined. Please call the office at 845-569-3638 or email them at disabilityservices@msmc.edu.

If you have met with the Coordinator in the Disability Services Office and have been given an accommodation letter, please make an appointment to speak with me as soon as possible so that we can discuss the logistics and implementation of your accommodations.

*IT Support Center (*https://portal.msmc.edu/ICS/Offices/Information_Technology/):

The IT Support Center is here to assist you with your general technology needs including Mount Account support, computer hardware/software issues, and more. IT will continue to assist with hardware, software, and/or network/connectivity issues during remote operations. Seek support from the IT Help Desk by emailing IT.Support@msmc.edu.

Kaplan Family Library (https://www.msmc.edu/library/):

The MSMC Library creates a dynamic, responsive learning environment by connecting people with information. They facilitate teaching and learning, foster scholarship, and create a vibrant intellectual and social gathering place for the Mount Saint Mary College community. They offer outstanding information resources, expert information literacy instruction, attentive personal service, and relevant programming in a space designed for study, discovery, collaboration, and inspiration. For more information, visit the library website, email library@msmc.edu, or call 845- 569-3600.

Tutoring (https://portal.msmc.edu/ICS/Offices/Tutoring_Center/):

The Office of Student Success offers tutoring, coaching, and more through video or phone meetings. Contact oss@msmc.edu for more information.

The Writing Center (https://www.msmc.edu/Student_Services/writing_center):

The Writing Center is the home for writing at Mount Saint Mary College. Their primary function is to support students as they are completing academic writing assignments. The Writing Center's team of trained writing tutors assists Mount students in all stages of the writing process: brainstorming and organizing ideas; structuring sentences, paragraphs, and essays; strengthening argumentation; incorporating research and appropriate systems of citation; improving grammar and style; and more! Students seeking help with their writing should email writing.center@msmc.edu.

Other Resources:

Instructional Support:

As your instructor, I am committed to your success not only in this course, but in your academic career as a whole. Please communicate with me if you are having trouble with any of the course topics, assignments, or otherwise. Please also reach out to your advisors and other academic resources listed above if you need additional support. If you are not sure who to reach out to, you can always speak to me first and I can help connect you to the proper resources!

Support with e-Class and Other Instructional Tools

As your instructor, please contact me first if you have any questions about e-Class or Zoom. I can best determine if you are having an "instructional" or "technical" issue. If you are in fact experiencing a technical issue, and what you are experiencing is not intentionally designed (e.g. hidden grade, hidden activity, Zoom meeting not available, etc.), I will research a solution or will refer you to the proper support.

Required Tutorial for First Time Online Learners (OLSOT):

If this is the first hybrid-online course you are taking at MSMC, you are required by the College to complete a tutorial to help you prepare you with the academic and technical skillset required for a successful learning experience. The tutorial, called the "Online Learning Student Orientation Tutorial" or "OLSOT," is 100% online and self-paced. For all fall 2020 courses, this tutorial can be accessed via an embedded information block located on the side of each e-Class course. You can expect to spend (1) hour on the tutorial. If you have any questions, please contact the Office of Digital Learning & Instructional Design Services at onlinelearning@msmc.edu.