

# Department of Computer Science

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## COURSE SYLLABUS Digital Forensics Investigation DFSC 5327      Fall 2017

**Location:** Academic Building 1, Room 206 or Online (Blackboard Collaborate)  
**Time:** Tuesdays and Thursdays, 11:00am-12:20pm  
**Instructor:** Dr. Umit Karabiyik (**Dr. K**)  
**Office:** Academic Building 1, Room 212-E  
**E-mail/Web:** [umit@shsu.edu](mailto:umit@shsu.edu) / [www.shsu.edu/uxk006](http://www.shsu.edu/uxk006)  
**Phone:** (936) 294-4785 (please leave VM if unanswered)  
**Office hours:** Tuesdays/Thursdays 9:30-11:00 pm, or by appointment

**Course description:** This course provides comprehensive knowledge in digital forensics from understanding the digital forensics investigation process to hands on experiences. This course explores tools for the recovery of information on hardware or hidden within other formats. Topics include data acquisition, cryptographic analysis, password recovery, the bypassing of specific target operating systems, and obtaining data from a digital device that has been destroyed. It will also prepare students for other more technical digital forensics courses with fundamental level of knowledge in the area. **Credit:** 3 hours.

**Course objectives:** After taking this course, students will have the theoretical and practical knowledge about the key issues relating to conducting a high-tech investigation using variety of digital forensic tools, from acquiring digital evidence to reporting its findings. In additional, the legal aspects of digital investigations will enhance student's knowledge towards both public and private investigations.

### Instructor Objectives:

**Essential:** Gaining a basic understanding of the subject (e.g., factual knowledge, methods, principles, generalizations, theories)

**Important:** Learning to apply course material (to improve critical thinking, problem solving, and decisions)

### Required Text:

**Guide to Computer Forensics and Investigations, 5th edition**  
by Bill Nelson, Amelia Phillips and Christopher Steuart  
**DVD is required with the book.**  
ISBN-10: 1285060032  
ISBN-13: 978-1285060033



### Course Requirements:

#### Assignments:

- There will be multiple homework/hands-on assignments. Assignment due dates will be posted along with the assignments files and posted on Blackboard.
- Each assignment contains a number of questions relevant to the course content (including textbook and lectures) as well as possible research components which require students to conduct individual research and possible lab exercises.

- Homework assignments must be typed in MS Word document and submitted to the relevant **BLACKBOARD PAGE** by due dates. The name of all assignment submissions should be in this format “[first&last\_name] - DFSC 5327 A2” which indicates Assignment 2 submission of a student for this course.
- **Copying and plagiarism is prohibited and will cause “F” grade automatically. Assignments must be done individually by each student unless specified otherwise.**
- **ALL** cited works must be listed using standard IEEE citation format (<http://www.ieee.org/documents/ieeecitationref.pdf>) in the submitted assignment file.
- All Assignment documents should contain the name of student and the date on which assignment was submitted. Failing on this will cause point deduction.
- If any programming is required in the assignment, codes/scripts must be provided in the submission.

#### ***Research Paper:***

**STEP 1:** Students conduct research by first studying various research publications found in journals, conference proceedings, technical magazines, and other reliable online and physical resources, then summarizing the findings (in a word document), including but not limited to the pros and cons of existing systems/algorithms/solutions. Students then submit a research proposal to the available Blackboard page.

**STEP 2:** Based on the area studied, the student will complete a research paper, ready (template in IEEE format will be posted to Blackboard) to be submitted to a conference/workshop/journal, based on either a study/survey of existing research and/or a practical project mainly completed by himself/herself. This project not only includes the information obtained from step-1, but also share possible improvements and new ideas/tools/methods. More information on these items will be made available during the course of the semester. Paper will be reviewed by the professor and comments will be given back to the student. If paper is considered to have good quality, professor will help edit it and find suitable conference/workshop/journal for submission. Student will be the first author of the paper; other contributors should be listed as co-authors, and professor should be listed as the last author of the paper. Students will also present their work in the classroom and the schedule for presentation will be posted by the professor. Details on online students’ presentations will be discussed later.

#### ***Exams:***

There will be one midterm for this course. The midterm exam is tentatively scheduled on Thursday, November 3<sup>rd</sup> during regular course hours (online students will use ProctorFree). Other exam related information will be discussed in class and be available on Blackboard. Generally speaking, no make-up for the exams will be provided. Students with legitimate excuses should contact the instructor before the midterm, with appropriate document, to arrange a make-up exam. No final exam will be schedule for the course. Instead, the students are expected to complete a significant research project as discussed above.

#### ***Late Policy:***

Late submission to the homework will be accepted **up to two days** after the deadline with a penalty of 10% of the assignment each day. Students with legitimate excuses should contact the instructor before the deadline, if possible, and submit appropriate document afterwards to be exempted from this rule. Submission page for the assignments will be unavailable on the third late day since **it’s too late**.

#### ***Discussion Board (Online Students Only):***

Discussions and question-and-answer with others via discussion forums are highly recommended, because students can clarify misunderstanding and also share their ideas with others. To promote the participation in discussion, your discussion activities (posting questions, answering questions, and so on) will be monitored and graded. Minimum requirement is to post at least one message to the Discussion Board. Messages that are not related to the course content or that are not in the nature of discussion, such as “Thanks!”, “What’s the due date of ...?”, etc. will not be counted for this rule.

|   |     |                             |
|---|-----|-----------------------------|
| <b>Grading plan:</b> <i>Assignments</i>                             | 50% | (Tentatively 5 Assignments) |
| <i>Exam</i>   | 20% | (1 Exam)                    |
| <i>Research Paper</i>   | 25% | (Paper and Presentation)    |
| <i>Attendance</i> (Discussion Board activities for online students) | 5%  |                             |

*Grading Criteria:*

|                      |   |
|----------------------|---|
| $\geq 90$            | A |
| $\geq 80$ but $< 90$ | B |
| $\geq 70$ but $< 80$ | C |
| $\geq 60$ but $< 70$ | D |
| $< 60$               | F |

### Online Course Resources

All course materials can be found on Blackboard at <https://blackboard.shsu.edu/webapps/login/>. All students must check their SHSU email accounts regularly because instructor may send important announcements via email.

### Class participation

In accordance with University Policy (<http://www.shsu.edu/dotAsset/b719129b-9593-424f-9d5a-920e2eda6890.pdf>), regular attendance is required. Your final grade will include 5% of your total grade based on your attendance. You are responsible for all material covered in every class, regardless of whether you attended or not. It is your responsibility to obtain notes, assignments, etc., from fellow class members if you miss a class. Online-only students are expected to participate in weekly discussion topics in lieu of classroom attendance.

### Academic dishonesty

All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The university and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including, but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials. No cheating on an examination or assignments is allowed. A score of zero will be given to the student if such a case occurred.

Students will refrain from behavior in the classroom that intentionally or unintentionally disrupts the learning process and, thus, impedes the mission of the university. Please turn off or mute your cellular phone and/or pager before class begins. Students are prohibited from eating in class, using tobacco products, making offensive remarks, reading newspapers, sleeping, talking among each other at inappropriate times, wearing inappropriate clothing, or engaging in any other form of distraction. Inappropriate behavior in the classroom shall result in a, minimally, a directive to leave class or being reported to the Dean of Students for disciplinary action in accordance with university policy.

### Students with disabilities policy

It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Any student with a disability that affects his/her academic performance should contact the Office of Services for Students with Disabilities in the SHSU Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786) to request accommodations. They should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation

can be made until you register with the Services for Students with Disabilities. For a complete listing of the university policy, see: <http://www.shsu.edu/dept/academic-affairs/documents/aps/students/811006.pdf>

**Religious Holidays**

An institution of higher education shall excuse a student from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. A student whose absence is excused under this subsection may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused within a reasonable time after the absence.

**Syllabus Change Policy**

Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice.

### Tentative Class Schedule

| Week | Date                                | Reading Assignments                   | Information on Homework Assignments, Test and Project |
|------|-------------------------------------|---------------------------------------|---|
| 1    | 24- August                          | Chapter 1                             | Syllabus Quiz   |
| 2    | 29- August<br>31- August            | Chapter 2 & 3                         |   |
| 3    | 5- September<br>7- September        | Chapter 4                             | Submit Assignment 1                                   |
| 4    | 12- September<br>14- September      | Chapter 5                             |   |
| 5    | 19- September<br>21 - September     | Chapter 6                             | Submit Research Proposal                              |
| 6    | 26- September<br>28- October        | Chapter 7 & 8                         | Submit Assignment 2                                   |
| 7    | 3- October<br>5- October            | Chapter 9                             |   |
| 8    | 10- October<br>12- October          | Chapter 10 & 11                       | Submit Assignment 3                                   |
| 9    | 17- October<br>19- October          | Chapter 12                            |   |
| 10   | 24- October<br>26- October          | Chapter 13 & 14                       |   |
| 11   | 31- October<br>2- November          | Review                                | Submit Assignment 4                                   |
|      |                                     |                                       | Exam Review   |
| 12   | 7- November<br>9- November          | Chapter 15 & 16                       | <b>Cumulative Exam</b>                                |
| 13   | 14- November<br>16- November        | Special Topics /<br>Research          |   |
| 14   | 21- November<br><b>23- November</b> | Research<br><b>No Class - Holiday</b> | Submit Assignment 5<br><b>Happy Thanksgiving!</b>     |
| 15   | 28- November<br>30- November        | Research Paper                        | In Class Research Presentation                        |
| 16   | 5- December<br>7- December          | Research Paper                        | Submit Research Paper                                 |