



SYLLABUS   
College of Computing and Software Engineering

Department of Information Technology

IT 4863: Web and Mobile Application Security

Fall 2021 section W01 (online)

# Course Information

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Class meeting time: There is no scheduled class meeting.

Modality and Location: Online

# Instructor

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**Name**: Samuel Wolde

**E-mail**: [swolde@kennesaw.edu](mailto:swolde@kennesaw.edu)

**Office Location**: Marietta campus, Norton Hall 221

**Office Phone**: 470-578-3803

**Office Hours**: TBD

**Course Communication**:

# Email is the best way to reach the instructor. Use D2L email if possible. Instructor’s KSU email (xxxx@kennesaw.edu) should only be used when you don’t have access to D2L site.

# Students’ emails will be replied WITHIN 24 hours during the weekday. Weekend and holidays don’t apply.

# When email the instructor using accounts other than D2L email, put the course number in the subject line. Emails without proper subject line will not be replied.

# Avoid using personal email. Sensitive information (such as your grades) can ONLY be sent to D2L email or KSU email account.

# Course Description

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**Prerequisites/Corequisites**: C or better in IT 3203

**Credit Hours:** 3-0-3

**Required Texts**: No textbook is required. Learning material will be provided in D2L course website

**Course Description:**

This course introduces web and mobile application security issues, hands-on practices to explore security vulnerabilities, best practices to defend against vulnerabilities in web and mobile

# Technology Requirements

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* This class uses D2L as hosting site. Run a system check to ensure your computer work with D2L. Check out UITS D2L training: <http://uits.kennesaw.edu/support/d2ltraining.php> .
* Internet Connection. A high-speed Internet connection such as DSL or cable Internet access is highly recommended. You may also use computer labs on campus to complete the coursework.
* A web camera is required for a student to take quizzes/exams.

I will provide all instructions assuming that you have Windows computer. We will use open source software, VM Player and Virtual Box. All this is available for Linux/Unix/MAC.

You must have

* 2 GHz or faster processor
* minimum 8GB RAM
* free disk space minimum 60GB
* administrative rights to your PC
* owner's permission to install course software if you are not the owner of the system.

# About the Course

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People learn through interactions, to facilitate interactive learning this course will use Discussions feature of D2L. Discussions will take place in an **asynchronous** manner.

There are 7 content modules in this course. Week starts Monday 12:00am and ends on Sunday at 11:59pm. All module assignments are due by 11:59 pm on Sunday, unless otherwise stated.

# Student Learning Outcomes

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Students who complete this course successfully will be able to:

* Describe common web and mobile security vulnerabilities
* Exploit web and mobile vulnerabilities with hands-on tools
* Defend against common web and mobile vulnerabilities

**Preparation of work for this course**

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You have to run all the code examples from each module before you attempt to complete assigned lab. All assignments must be submitted through D2L before the corresponding deadline. No assignments will be accepted via email.

Each module contains:

1. Assigned reading and additional reading for students who want to read further on the week's topic
2. Online content.
3. Assigned hands-on exercises.
4. Discussion topic OR quiz.
5. Apply your knowledge section.

For each content module you should:

1. Read the on-line content and the assigned sections from the text.
2. Post questions, corrections, or comments about the content in the discussion area designated for the module.
3. Do assigned homework/quiz/lab - due by 11:59 PM on Sunday.

Throughout the course, you should log in regularly to check for announcements and email. The course Calendar posted on D2L contains all important dates. Any changes of dates will be publicized by post in discussion area and/or email.

# Course Requirements and Assignment

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The course schedule is tentative and is subject to change. Please use D2L course calendar as accurate due dates.

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| --- | --- | --- |
| Week | Topics | Due item |
| 1 (8/16-8/22) | Module 1: Introduction to web server |  |
| 2 (8/23- 8/29) | Module 1: Web server security | Asg 1&2, Disc#1 |
| 3 (8/30- 9/5) | Module 2: OWASP Top10, Injection attack |  |
| 4 (9/6- 9/12) | Module 2: Scanning web, discovering vulnerabilities | Asg 3&4, Quiz1 |
| 5 (9/13 -9/19) | Module 3: Web phishing, Web Single Sign on |  |
| 6 (9/20-9/26) | Module 3: Web session security | Asg5, Quiz2 |
| 7 (9/27-10/3) | Module 4: Web tracking, Term project introduction |  |
| 8 (10/4-10/10) | Module 4: Anonymity on Web and TOR communication | Asg 6&7, Disc#2 |
| 9 (10/11-10/17) | Module 5: Mobile app security overview |  |
| 10 (10/18- 10/24) | Module 5: Mobile App input and output data sanitization | Asg8, Quiz3 |
| 11 (10/25-10/31) | Module 6: Mobile device security, content provider leakage |  |
| 12 (11/1-11/7) | Module 6: IPC security, intent spoofing and eavesdropping, Android UI attack and mitigation | Asg 9&10, Disc#3 |
| 13 (11/8-11/14) | Module 7: Android Malware, Static analysis, DroidPatrol |  |
| 14 (11/15-11/21) | Module 7: Dynamic analysis, MobiSF | Asg 11&12 |
| 15 (11/22-11/28) | Fall Break (no lecture) |  |
| 16 (12/29-12/5) | Review | Project research paper |

# Evaluation and Grading Policies

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## **Weight Distribution**

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| **Grading Item** | **Points** |
| Assignments (12) | 60% |
| Discussion (3) | 10% |
| Quizzes (3) | 10% |
| Research paper | 20% |
| **Total** | **100%** |

## **Grading Scale:**

90% - 100% A

80% - 89% B

70% - 79% C

60% - 69% D

0% - 59% F

Grades will be rounded up if they are > or = .5 or above, for example, an 89.6 is an A, but 79.2 is a C.

**Important dates:**

* Add/Drop ends: Aug 20 11:45 p.m.
* Last Day to Withdraw Without Academic Penalty: Oct 21 11:45 p.m.
* Last Day to Withdraw for the Term With a WF: Nov 29.
* Last Day of Class: Dec 6.

# Course Policies

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# Course Attendance Policy

* For on campus/hybrid section, students are expected to come to each class on time. Stay during the whole class period.
* For both campus/hybrid and online section, students’ attendance is also measured by how often a student login in D2L course website, participation of online discussion, as well as on-time completion of homework.

# Grading Items Turnaround Time

* The grades for the quizzes and midterm exam will be available immediately after the due dates
* The grades for assignments, discussions, research paper and final exam will be available 96 business hours after the due date

# Assignments & Exam Policy

* All assignments **MUST** be submitted through D2L (<https://kennesaw.view.usg.edu/> ) course website by the deadline specified in course calendar. Email submission will **NOT** be accepted. Any late assignment is subject to 10% penalty, for each day of late submission, unless notified to the instructor and agreed to submit late for reasonable excuses. Any assignment that is more than 1 week late will **NOT** be accepted.
* All quizzes and exams MUST be completed on D2L website by the deadline specified in course calendar. The quizzes and exams can’t be opened/submitted after the deadline.
* If you must miss an exam due to illness, you must e-mail or call the instructor before the scheduled time. Failure to notify the instructor prior to the scheduled time will produce an automatic zero for the exam. NO makeup test except for emergencies with proof (e.g. doctor’s slip).

**Student Responsibility**

For this class, you are expected to spend seven to eight hours each week on coursework:

* Check KSU email regularly;
* Login D2L course website frequently to access the course material (at least every other day);
* Follow the weekly study guide in the learning module;
* Study the assigned material such as virtual lectures, textbook chapters and the PowerPoint slides;
* Complete assigned quiz/assignment/discussion/project on time.

**Tips for Effective Online Learning**

For an online class, students can really enjoy the benefits of learning at you own pace and at the place of your choice. Below are some tips for effective online learning.

* *Check D2L course website frequently*. It’s recommended that students should login D2L course site **AT LEAST** every other day. Always be aware of current status of the course. Take advantage of the posted learning material such as recorded lectures.
* *Work with the instructor closely*. If you have any question, contact the instructor immediately. You can either email or text me and your message is guaranteed to be replied within 12 hours.
* *Start your work early*. If you can start a task early, don’t start late. Assuming you spend the same amount of time completing the task, starting later will be much more stressful than starting early. Never start until the last minute! You’ll have no turnaround time if you need help or something happens.
* *Keep up with the work*. Don’t fall behind. If you do, contact the instructor immediately for what you need to do. The instructor may also contact you if he is concerned. Respond to the instructor’s inquiry promptly.

**Class Communication Rules**

In any classroom setting there are communication rules in place that encourage students to respect others and their opinions. In an online environment, the do's and don'ts of online communication are referred to as **Netiquette**. As a student in my course you should:

* Be sensitive and reflective to what others are saying.
* **Avoid typing in all capitals** because it is difficult to read and is considered the electronic version of 'shouting'.
* Don't flame - These are outbursts of extreme emotion or opinion.
* Think before you hit the post (enter/reply) button. You can't take it back! Don't use offensive language.
* Use clear subject lines.
* Don't use abbreviations or acronyms unless the entire class knows them. Be forgiving. Anyone can make a mistake.
* Keep the dialog collegial and professional, humor is difficult to convey in an online environment.
* Always **assume good intent** and **respond accordingly**. If you are unsure of or annoyed by a message, wait 24 hours before responding.

**Institutional Policies**

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* [Federal, BOR, & KSU Course Syllabus Policies](https://cia.kennesaw.edu/instructional-resources/syllabus-policy.php)
* [Academic Integrity Statement](http://scai.kennesaw.edu/codes.php)
  + Examples of violation of academic integrity: 1) copy from others or from Internet; 2) allow others to copy your work; 3) use other’s help or help other in completing the quizzes or exams.
  + The first violation of academic integrity, the student will immediately receive 0 for the associated grading item. For the 2nd violation, the student will receive a fail grade for this course.

**KSU Statements on Course Delivery and COVID-19**

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**Course Delivery**

KSU may shift the method of course delivery at any time during the semester in compliance with University System of Georgia health and safety guidelines. In this case, alternate teaching modalities that may be adopted include hyflex, hybrid, synchronous online, or asynchronous online instruction.

**COVID-19 illness**

If you are feeling ill, please stay home and contact your health professional. In addition, please email your instructor to say you are missing class due to illness. Signs of COVID-19 illness include, but are not limited to, the following:

* Cough
* Fever of 100.4 or higher
* Runny nose or new sinus congestion
* Shortness of breath or difficulty breathing
* Chills
* Sore Throat
* New loss of taste and/or smell

COVID-19 vaccines are a critical tool in “Protecting the Nest.” If you have not already, you are strongly encouraged to get vaccinated immediately to advance the health and safety of our campus community. As an enrolled KSU student, you are eligible to receive the vaccine on campus. Please call (470) 578-6644 to schedule your vaccination appointment or you may walk into one of our student health clinics.

For more information regarding COVID-19 (including testing, vaccines, extended illness procedures and accommodations), see KSU’s official [Covid-19 website](https://coronavirus.kennesaw.edu/).

**Masks**

While masks are no longer mandated on campus, you are strongly encouraged to wear a mask when in class if you have not received a COVID-19 vaccination.

# Student Resources

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This link contains information on help and resources available to students: [KSU Student Resources for Course Syllabus](https://curriculum.kennesaw.edu/resources/ksu_student_resources_for_course_syllabus.php)