Syllabus

EECS777 - Software Security Evaluation Research
2025, Fall

Course Personnel

Instructor Drew Davidson – drewdavidson@ku.edu

Resources

- Class Website: https://analysis.cool
- Piazza: https://piazza.com/class/med6umc9zqh3nw
- Book: None Required

Prerequisites

EECS 448 or EECS 348, and EECS upper-level eligibility. This class requires skill in applied *and* theoretical aspects of computer science. Although it is not a hard prerequisite, a undergraduate-level class on compilers would be helpful. You should be comfortable with Linux and C++ programming.

Availability Policy

Email: All course-related email to instructors should be sent to the email addresses listed above. Students are expected to read course emails within 24 hours. Course emails will be sent to students' official @ku.edu email address and/or the address registered to Canvas.
Piazza: This course uses Piazza for course Q&A. Students are expected to join the course Piazza group. Students may not post code for assignments on Piazza. Anonymous posting is allowed, but may be revoked at the instructor's discretion.
Office Hours: Office hours will be posted on the course website. Walk-in office hours are subject to cancellation and re-scheduling. Students may make appointments for office hours and are expected to do so if the listed times present conflicts.

Course Topics

The following is a tentative list of course topics:

Topic
Formal analysis of software systems
Integrity and secrecy
Software assessment
Software vulnerabilities
Bug finding
Anomaly detection
Dynamic analysis
Static analysis
Dataflow analysis
Fuzzing
Linting
Software supply chain auditing
Security best practices

Topics may be added or dropped as time permits. If the instructor feels a topic has not been covered sufficiently, students will be notified 24 hours before any assessment regarding the material that they are not responsible for knowing it. Classes may be taught by a substitute or canceled as per School of Engineering Guidelines.

Letter Grades

Letter grades are based on the standard cutoffs, as listed below. Bonus points may be granted automatically to all students and opportunities for extra credit may be made available during the semester.

Course grades may be curved at the instructor's discretion. Curves will not lower a student's letter grade, but may raise it. Curves will be applied universally to all students.

Threshold	Grade
90%	A
80%	B
70%	C
60%	D
50%	F

Assignment Breakdown

Survey - 1%

A short survey will be due at 11:59 PM on the first day of lecture. This survey facilitiates logistical aspects of the course, and the awarded grade is based on completion. Students who do not complete the survey by the due date will be asked to complete it for no credit. Any additional surveys conducted over the semester will be anonymous and not for credit, though student participation is greatly appreciated.

Quizzes - 39%

Quizzes are conducted during the lecture time in lieu of a midterm examination and are non-cumulative. Students are allowed a single double-sided sheet of letter-size paper for notes per quiz, collected and kept at the end of the quiz.

Exercises - 5%

Exercises are short review prompts attached to lectures. If a student attends that lecture, the solution will be given in-class and that student will automatically be awarded full credit. Should a student be unable or unwilling to attend a exercise's corresponding class, that student may be given a replacement assignment to complete on their own and submitted to Canvas by 11:59 on the following Sunday.

Research Summaries - 5%

Research summaries involve reading a research paper, synthesizing the main points of the work, and submitting a short written assignment that demonstrates your understanding of the work to Canvas. Submissions should be typeset, ideally in LaTeX, and submitted as PDF. Research summaries must be completed individually and written manually. A student is expected to understand and explain what they have written.

Homework - 50%

Homework comprises the use and development of software analysis. The majority of homework will be composed of writing code.

- Submitted to Canvas
- Accepted up to 48 late according to the penalty system below
- May be completed alone or with 1 partner. Students are free to change or abandon partnerships between projects.

Late Penalties: Homework may be submitted up to 24 hours late for a penalty (15% off). Homework may be submitted up to 48 hours late for 2 penalties (30% off).

Penalty Tokens: Students are granted 6 "penalty tokens" for the entire semester. Each penalty token forgives a single late penalty, but does not further extend the deadline. Tokens are automatically applied to late projects to maximize student points.

Collaboration Policy

Using someone else's work or allowing access to work in violation of the collaboration policy is academic misconduct and will be dealt with in accordance to the University Academic Misconduct procedures. Note that sharing code or answers to assigned work constitutes a violation of the policy. Making code or answers publicly available is considered sharing (e.g., posting publicly on GitHub).

Violations of the academic misconduct policy may be initiated and pursued even after the completion of the course with the intent to remove the student's grade or status from the University.

If you are not sure if something violates the collaboration policy, please ask the instructor. Ignorance of what constitutes a violation of the policy is not a defense; it is your responsibility to be sure.

Disruptive Behavior

As a courtesy to the instructor and class, students should make special effort to show respect towards everyone during lectures, labs, and in online communication. While the instructor encourages a relaxed and friendly atmosphere, anyone causing disruptions may be asked to leave. Students should note that class disruption is considered academic misconduct under KU policy and may be dealt with accordingly.

Video Recording

The instructor may take video or audio recordings of lectures. Students who do not want to be recorded should speak to the instructor. Note that video materials created in this class are subject to the intellectual property policy detailed below. These materials are for personal use only and should not be distributed beyond the class.

Accommodation

`http://disability.ku.edu/syllabus-statement-0`
Academic Achievement and Access Center (AAAC) coordinates academic accommodations and services for all eligible KU students with disabilities. If you have a disability for which you wish to request accommodations and have not contacted the AAAC, please do so as soon as possible.They are located in 22 Strong Hall and can be reached at 785-864-4064 (V/TTY); Information about their services can be found at http://www.disability.ku.edu. Please contact me (us) privately in regard to your needs in this course.

Nondiscrimination

`http://ioa.ku.edu/ku-non-discrimination-policy`
The University of Kansas prohibits discrimination on the basis of race, color, ethnicity, religion, sex, national origin, age, ancestry, disability, status as a veteran, sexual orientation, marital status, parental status, retaliation, gender identity, gender expression and genetic information in the University's programs and activities. Please contact the University's Title IX Coordinator at `IOA@ku.edu` with any inquiries.

Religious Observances

Should the examination schedule for this course conflict with your mandated religious observance, please contact me at the beginning of the semester so that to schedule a make-up exam at a mutually acceptable time.
In addition, students will not be penalized for absence from regularly scheduled class activities which conflict with mandated religious observances. Students are responsible for initiating discussion with the instructor to reach a mutually acceptable solution.

Policy on test taking, student responsibility and religious observance:
`http://policy.ku.edu/governance/USRR#art1sect4`

Policy on attendance evaluation and mandated religious observance:
`http://policy.ku.edu/governance/USRR#art2sect1`

Academic Misconduct

Students should review the university policy on Academic conduct at:
`http://policy.ku.edu/governance/USRR#art2sect6`

Intellectual Property

`http://policy.ku.edu/provost/intellectual-property-policy`
Course materials prepared by the instructor, together with the content of all lectures and review sessions presented by the instructor are the property of the instructor. Video and audio recording of lectures and review sessions without the consent of the instructor are prohibited. Unless explicit permission is obtained from the instructor, recordings of lectures and review sessions may not be modified and must not be transferred or transmitted to any other person, whether or not that individual is enrolled in the course.
Pursuant to the University of Kansas Policy on Commercial Note-Taking Ventures, commercial note-taking is not permitted in EECS 665. Lecture notes and course materials may be taken for personal use, for the purpose of mastering the course material, and may not be sold to any person or entity in any form. Any student engaged in or contributing to the commercial exchange of notes or course materials will be subject to discipline, including academic misconduct charges, in accordance with University policy. Please note: note-taking provided by a student volunteer for a student with a disability, as a reasonable accommodation under the ADA, is not the same as commercial note-taking and is not covered under this policy.