Instructor
Liban A Egal
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Telephone: (571) 241-3259
Office Hours: By email, phone or by appointment only
Office Location: Engineering Building, Room 3707

Teaching Assisting
TBD

Location & Time
Lawful Network Surveillance Technology and Requirements - 16113 - CFRS 780 - 001
Location: Innovation Hall 320, Fairfax Campus.
Time: Tuesday 4:30 PM.-07:10 PM.

Textbook
Title: Intelligence Support Systems: Technologies for Lawful Intercepts
- Author: Paul Hoffmann (Editor), Kornel Terplan (Editor)
- Publisher: Taylor & Francis, Inc.
- Pub. Date: July 2005
- ISBN: 0849328551
Course Description
780 Lawful Network Surveillance Technology and Requirements (3:3:0) Introduces students to the Lawfully-Authorized Electronic Surveillance (LAES) network technology and its relation to computer forensics. The class addresses Lawfully-Authorized Electronic Surveillance network systems architecture, system interception functions, protocol analysis, and various LEAS and communication interception requirements.

Prerequisites
TCOM 509, 529, and a working knowledge of computer programming.

Course Objectives
At the conclusion of this course the student will have learned why and how the lawfully-authorized electronic surveillance (LAES) network systems are used and how they are applied in the forensics area. The student will also know the LEAS system requirements, system components, and interface protocols and other leading areas of research in lawfully-authorized electronic surveillance and forensics.

Grading
Raw scores may be adjusted to calculate final grades. Grades will be assessed on the following components:

- Homework: 30%
- Mid-term: 30%
- Final Paper: 40%

These components are outlined in the following sections.

Homework
Homework 1 - This homework will be posted on the Blackboard website and will be due by class time on Feb. 16.

Homework 2 – This homework will be posted on the Blackboard website and will be due by class time on April 13.

Homework 3 – Prepare and present a short presentation on your research paper topic. This will be around 5-10 minutes. You may prepare PowerPoint slides with talking points or figures if you wish. However, no more than three slides due to time limit. In your presentation please address the following:

1. Summarize the topic of the research.
2. How is this research advancing the science of lawfully-authorized electronic surveillance? What makes this research so great?
3. Any other interesting information about this research.
You will not have time to go into the details of the methodology or testing of the research, so just hit the highlights. Please prepare a 1-2 page write-up of your presentation to hand in before class time.

This homework is due in class on April 27. If you have a prior commitment and will not be in class on April 27, please discuss with me.

Late reports will be assessed a penalty of 25% of the assignment grade for each week or part thereof of it is late. No homework will be accepted after the third week.

**Mid-term exams**
The mid-term exam will be in-class exam and will cover materials discussed in Weeks 1-6.

**Final exam**
Each student should pick a research paper with a focus on lawful interception systems and write a response/critique of the paper. Do not just repeat what the authors say, think about what they are saying and what they are possibly missing. Your critique should include the following:

1. A summary of what was done.
2. What are the central contributions of the paper?
3. A summary of related work.
4. What are the principal shortcomings of the technical content of the paper?
5. Other advantages and disadvantages of the technique.
6. Future research that may be done in the addressed area.

This is an individual assignment. You are required to complete it on your own without assistance of anyone.

1. Papers must be 5-10 pages in length.
2. Papers may be accessed through the ACM Digital Library accessible through GMU or other search engines.
3. You will present your findings in class.
4. The final paper is due on presentation day.

**Schedule**

<table>
<thead>
<tr>
<th>Date</th>
<th>Week</th>
<th>Topic</th>
<th>Assignments</th>
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<tbody>
<tr>
<td>25 Jan.</td>
<td>1</td>
<td>Introduction Lawfully authorized system standards and requirements</td>
<td></td>
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<tr>
<td>1 Feb.</td>
<td>2</td>
<td>Lawful intercept solution architectures</td>
<td></td>
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<td>8 Feb.</td>
<td>3</td>
<td>Main system components of the lawfully authorized system interception</td>
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<tr>
<td>15 Feb.</td>
<td>4</td>
<td>Intercept access points in infrastructure components</td>
<td>HW 1 due</td>
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<tr>
<td>22 Feb.</td>
<td>5</td>
<td>Network Reference Model: Access Function</td>
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<tr>
<td>Date</td>
<td>No.</td>
<td>Event</td>
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<tr>
<td>1 Mar.</td>
<td>6</td>
<td>Network Reference Model: Service Provider Administration Function (SPAF)</td>
<td>Submit research paper chosen for final exam</td>
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<tr>
<td>8 Mar.</td>
<td>7</td>
<td>Mid Term (Covers weeks 1-6)</td>
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<tr>
<td>15 Mar.</td>
<td>8</td>
<td>Spring Recess</td>
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<tr>
<td>22 Mar.</td>
<td>9</td>
<td>Network Reference Model: Law Enforcement Administration Function (LEAF)</td>
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<td>29 Mar.</td>
<td>10</td>
<td>Network Reference Model: Interface Reference Points</td>
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<td>5 Apr.</td>
<td>11</td>
<td>Lawfully authorized wireless communications interception information.</td>
<td></td>
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<td>12 Apr.</td>
<td>12</td>
<td>Call Associated Information and Call-Identifying Information</td>
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<td>HW 2 due</td>
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<td>19 Apr.</td>
<td>13</td>
<td>Circuit Intercept Access Point</td>
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<td>26 Apr.</td>
<td>14</td>
<td>Intercept Access Point for packet data</td>
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<td>HW 3 due</td>
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<td>3 May</td>
<td>15</td>
<td>Location and timing information</td>
<td></td>
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<tr>
<td>10 May</td>
<td>16</td>
<td>Final Exam</td>
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*This schedule is subject to revision before and throughout the course.*

Call 703-993-1000 for recorded information on campus closings (e.g. due to weather).

**Attendance Policy**

Students are expected to attend each class, to complete any required preparatory work (including assigned reading) and to participate actively in lectures, discussions and exercises. As members of the academic community, all students are expected to contribute regardless of their proficiency with the subject matter.

Students are expected to make prior arrangements with Instructor if they know in advance that they will miss any class and to consult with the Instructor if they miss any class without prior notice.

Departmental policy requires students to take exams at the scheduled time and place, unless there are truly compelling circumstances supported by appropriate documentation. Except in such circumstances, failure to attend a scheduled exam may result in a grade of zero (0) for that exam.

**Communications**

Communication on issues relating to the individual student should be conducted using email or telephone. Email is the preferred method – for urgent messages, you should also attempt to contact the Instructor via telephone. Email messages from the Instructor to all class members will be sent to students' GMU email addresses – if you use another email account as your primary address, you should forward your GMU email to that account.
Lecture slides are complements to the lecture process, not substitutes for it. Access to lecture slides will be provided as a courtesy to students provided acceptable attendance is maintained.

**Honor Code**  
Students are required to be familiar and comply with the requirements of the [GMU Honor Code](http://www.gmu.edu/catalog/apolicies/honor.html).[1]  
The Honor Code will be strictly enforced in this course.

All assessable work is to be completed by the individual student.

Students must **NOT** collaborate on the project reports or presentation without explicit prior permission from the Instructor.

**Office of Disability Services**  
If you are a student with disability and you need academic accommodations, please see me and contact the Office of Disability Services (ODS) at 993-2474. All academic accommodations must be arranged through the ODS.

**Key Dates**:  

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>First day of classes</td>
<td>January 25</td>
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<tr>
<td>Last day to add classes</td>
<td>February 07</td>
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<tr>
<td>Last day to drop with no tuition penalty</td>
<td>February 07</td>
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<tr>
<td>Last day to drop classes with no academic liability</td>
<td>February 24</td>
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<tr>
<td>Spring Break</td>
<td>March 14 – March 20</td>
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<tr>
<td>Last day of classes</td>
<td>March 07</td>
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<tr>
<td><strong>Exam Period</strong></td>
<td>May 10 – May 17</td>
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[1] Available at [www.gmu.edu/catalog/apolicies/honor.html](http://www.gmu.edu/catalog/apolicies/honor.html) and related GMU Web pages.