1. Catalog Description of the Course.

COMP 524 SECURITY (3)
Three hours lecture in the lab per week.
Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
A survey of security issues and techniques for stand-alone and networked computer systems including
databases. Techniques such as auditing, risk analysis, cost-benefit analysis. Security standards. Application
in various fields.

2. Mode of Instruction.

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<thead>
<tr>
<th>Units</th>
<th>Hours per Unit</th>
<th>Benchmark Enrollment</th>
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<tbody>
<tr>
<td>Lecture</td>
<td>3</td>
<td>1</td>
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<tr>
<td>Seminar</td>
<td>0</td>
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<tr>
<td>Laboratory</td>
<td>0</td>
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<tr>
<td>Activity</td>
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Justification: This course is an elective for graduate students in MS in Mathematics and MS in
Computer Science programs. Computer system security is an increasingly important topic. Amount of on-
line data doubles every three years. Much of is, such as biomedical, may be highly sensitive. Graduates of
an MS program must be current in this area.

Learning Objectives:
1. Be able to identify the security weaknesses in a network design.
2. Be able to interpret a security standard in the context of a particular system.
3. Be able to design appropriate security protocols for a particular system.
4. Be able to design appropriate security protocols in different application fields.

4. Is this a General Education Course?

No.

5. Course Content in Outline Form.

Topics:
1. Physical and Logical Security
2. Security policies, cryptography and authentication
4. Security of biomedical data
5. Developing secure systems
6. Security standards
7. Security and safety

6. References.

Title        Author                  Publisher          Year    ISBN
1. The handbook of applied cryptography   Alfred J. Menezes, Paul C. van Oorschot and Scott A. Vanstone
                                          CRC Press    1996    0849385237
                                          Wiley       2001    0471389226

7. Faculty Qualified to Teach This Course.
Qualified Faculty: CS Faculty

8. **Frequency.**
Projected semesters to be offered: Fall, Spring, Summer

9. **New Resources Required.**
a. New Equipment needs: use of existing computer lab
b. New Library needs: none
c. New Space/Facilities needs: none

10. **Consultation.**
Attach consultation sheet from all program areas, Library, and others (if necessary).

11. **Program Modification.**
If this new course will alter any degree, credential, certificate, or minor in your program, attach a program modification.

12. **Proposer of Course.**


Proposer of Course          Date