IT Security Lab: Vulnerability Assessment

Module title: IT Security Lab: Vulnerability Assessment

Credits: 6

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Office: EN 6

Display language: Englisch

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Website: http://www.kbs.tu-berlin.de/

Learning Outcomes

Students who have successfully finished the course will be able to select the right approach and tools to analyze unknown software for security problems. They will be able to assess the significance of their findings and to explain it to a non-expert.

The course is principally designed to impart: technical skills 50%, method skills 40%, system skills 0%, social skills 10%.

Content

Manual and semi-automated code reviews of server software, web applications, and client software. Fixing problems with low impact on the existing system and its usability as well as documenting the findings in advisories.

Module Components

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Type</th>
<th>Number</th>
<th>Cycle</th>
<th>SWS</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-Security Lab: Vulnerability Assessment</td>
<td>PR</td>
<td>0432 L 554</td>
<td>SS</td>
<td>4</td>
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</tbody>
</table>

Workload and Credit Points

<table>
<thead>
<tr>
<th>IT-Security Lab: Vulnerability Assessment (Praktikum)</th>
<th>Multiplier</th>
<th>Hours</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practical cases</td>
<td>1.0</td>
<td>90.0h</td>
<td>90.0h</td>
</tr>
<tr>
<td>Preparation for and participation in a security contest</td>
<td>1.0</td>
<td>30.0h</td>
<td>30.0h</td>
</tr>
<tr>
<td>Preparing a talk</td>
<td>1.0</td>
<td>30.0h</td>
<td>30.0h</td>
</tr>
<tr>
<td>Presence</td>
<td>15.0</td>
<td>2.0h</td>
<td>30.0h</td>
</tr>
</tbody>
</table>

The Workload of the module sums up to 180.0 Hours. Therefor the module contains 6 Credits.

Description of Teaching and Learning Methods

The main teaching method of this module is problem based learning. In order to get to know the tools and best practices, a series of interactive lectures is given. There will be small hands-on exercises to get familiar with the topics taught. To get practical experience, the participants will then work on multiple complex cases. The exercises are concluded with a general discussion on the results of the exercise, but also on the strategies employed by the participants. Additionally, each student will give a talk on recent developments in the security area. The learned skills will be applied in an international security contest during the semester (if no contest is organized during a given semester, this part will be substituted by a local exercise with a similar setting).

Requirements for participation and examination

Desirable prerequisites for participation in the courses:

Programming skills in at least one of the following languages: C, PHP, shell script and experience operating a Linux system are required. Knowledge of a basic/undergrad security lecture is recommended.

Mandatory requirements for the module test application:

No information

Module completion

<table>
<thead>
<tr>
<th>Grading:</th>
<th>Type of exam:</th>
<th>Language:</th>
</tr>
</thead>
<tbody>
<tr>
<td>graded</td>
<td>100 points in total</td>
<td>English</td>
</tr>
</tbody>
</table>

Grading scale:

Note: 1.0 1.3 1.7 2.0 2.3 2.7 3.0 3.3 3.7 4.0

Punkte: 95.0 90.0 85.0 80.0 75.0 70.0 65.0 60.0 55.0 50.0
**Test description:**

Insgesamt können 100 Portfoliopunkte erreicht werden:
- ein Referat (32 Portfoliopunkte),
- Programmieraufgabe (große Semesteraufgabe, 32 Portfoliopunkte),
- 4 Programmieraufgaben (kleine Aufgaben, je 9 Portfoliopunkte).

Die Gesamtnote gemäß § 47 (2) AllgStuPO wird nach dem Notenschlüssel 2 der Fakultät IV ermittelt.

<table>
<thead>
<tr>
<th>Test elements</th>
<th>Category</th>
<th>Points</th>
<th>Duration/Extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 kleine Programmieraufgaben</td>
<td>practical</td>
<td>36</td>
<td>6 Stunden</td>
</tr>
<tr>
<td>Programmieraufgabe (große Semesteraufgabe)</td>
<td>practical</td>
<td>32</td>
<td>10 Stunden</td>
</tr>
<tr>
<td>Referat</td>
<td>oral</td>
<td>32</td>
<td>20 Minuten</td>
</tr>
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</table>

**Duration of the Module**

This module can be completed in 1 semester.

**Maximum Number of Participants**

This module is not limited to a number of students.

**Registration Procedures**

See [http://www.kbs.tu-berlin.de](http://www.kbs.tu-berlin.de)

**Recommended reading, Lecture notes**

- **Lecture notes:**
  - unavailable

- **Electronical lecture notes:**
  - available

  *Additional information:

**Assigned Degree Programs**

This module is used in the following modulelists:
The module is offered every year.