



# IT Security Lab: Vulnerability Assessment

<b>Module title:</b> IT Security Lab: Vulnerability Assessment	<b>Credits:</b> 6	<b>Responsible person:</b> Heiß, Hans-Ulrich
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	<b>Display language:</b> Englisch	<b>E-mail address:</b> lehre@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

Course Name	Type	Number	Cycle	SWS
IT-Security Lab: Vulnerability Assessment	PR	0432 L 554	SS	4

## Workload and Credit Points

IT-Security Lab: Vulnerability Assessment (Praktikum)	Multiplier	Hours	Total
Practical cases	1.0	90.0h	90.0h
Preparation for and participation in a security contest	1.0	30.0h	30.0h
Preparing a talk	1.0	30.0h	30.0h
Presence	15.0	2.0h	30.0h
			180.0h

The Workload of the module sums up to 180.0 Hours. Therefore 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

<b>Grading:</b> graded	<b>Type of exam:</b> 100 points in total	<b>Language:</b> English
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### 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.

Test elements	Categorie	Points	Duration/Extent
4 kleine Programmieraufgaben	practical	36	6 Stunden
Programmieraufgabe (große Semesteraufgabe)	practical	32	10 Stunden
Referat	oral	32	20 Minuten

**Duration of the Module**

This module can be completet in 1 semesters.

**Maximum Number of Participants**

This module is not limited to a number of students.

**Registration Procedures**

See <http://www.kbs.tu-berlin.de>

**Recommended reading, Lecture notes****Lecture notes:**

*unavailable*

**Electronical lecture notes :**

available

**Additional information:**

<http://www.kbs.tu-berlin.de/>

**Assigned Degree Programs**

This module is used in the following modulelists:

**Computer Engineering (Master of Science)**

StuPO 2015

Modullisten der Semester: SS 2017 WS 2017/18

**Computer Science (Informatik) (Master of Science)**

StuPO 2015

Modullisten der Semester: SS 2017 WS 2017/18

**Double-Degree-Masterstudiengang ICT Innovation (Master of Science)**

Msc ICT Innovation PO 2014

Modullisten der Semester: SS 2017 WS 2017/18

**Elektrotechnik (Master of Science)**

StuPO 2015

Modullisten der Semester: SS 2017 WS 2017/18

**Informatik (Bachelor of Science)**

BSc Informatik StuPO 2014

Modullisten der Semester: SS 2017 WS 2017/18

StuPO 2013

Modullisten der Semester: SS 2017

StuPO 2015

Modullisten der Semester: SS 2017 WS 2017/18

**Informatik (Master of Science)**

MSc Informatik PO 2013

Modullisten der Semester: SS 2017 WS 2017/18

**Naturwissenschaften in der Informationsgesellschaft (Bachelor of Science)**

StuPO 2009

Modullisten der Semester: SS 2017 WS 2017/18

**Technische Informatik (Bachelor of Science)**

BSc Technische Informatik StuPO 2015

Modullisten der Semester: SS 2017 WS 2017/18

StuPO 2013

Modullisten der Semester: SS 2017 WS 2017/18

**Technische Informatik (Master of Science)**

StuPO 2013

Modullisten der Semester: SS 2017 WS 2017/18

**Wirtschaftsinformatik (Bachelor of Science)**

BSc Wirtschaftsinformatik StuPO 2015

Modullisten der Semester: SS 2017 WS 2017/18

StuPO 2013

Modullisten der Semester: SS 2017 WS 2017/18

**Wirtschaftsinformatik / Information Systems Management (Master of Science)**

StuPO 2013

Modullisten der Semester: SS 2017 WS 2017/18

StuPO 2017

Modullisten der Semester: WS 2017/18

**Wirtschaftsingenieurwesen (Master of Science)**

StuPO 2015

Modullisten der Semester: WS 2017/18

**Miscellaneous**

The module is offered every year.