








## Mapping SEED Labs to Textbook Chapters

The SEED labs work well with most textbooks. To help instructors decide which labs to use, we have mapped our SEED labs to the chapters of several security textbooks. The mappings are conducted on the following seven textbooks. As new textbooks, new editions, and new labs become available in the future, we will update this document accordingly.

<b>Book Title</b>	<b>Ed.</b>	<b>Year</b>	<b>Authors</b>	<b>Cover</b>
<i>Computer Security: Principles and Practice</i>	2 <sup>nd</sup>	2012	William Stallings and Lawrie Brown	
<i>Introduction to Computer Security</i>	1 <sup>st</sup>	2011	Michael T. Goodrich and Roberto Tamassia	
<i>Computer Security</i>	3 <sup>rd</sup>	2011	Dieter Gollmann	
<i>Security in Computing</i>	4 <sup>th</sup>	2006	Charles P. Pfleeger and Shari Lawrence Pfleeger	
<i>Introduction to Computer Security</i>	1 <sup>st</sup>	2004	Matt Bishop	
<i>Computer Security: Art and Science</i>	1 <sup>st</sup>	2002	Matt Bishop	
<i>Network Security: Private Communication in a Public World</i>	2 <sup>nd</sup>	2002	Charlie Kaufman, Radia Perlman, and Mike Speciner	

## Mapping SEED Labs to Textbook Chapters

*Computer Security: Principles and Practice, 2<sup>nd</sup> ed.*  
 William Stallings & Lawrie Brown  
 Prentice Hall, 2012



Types	Labs	Time (week)	Chapters
Vulnerability and Attack Labs (Linux-based)	Buffer Overflow Vulnerability	1	10
	Return-to-libc Attack	1	10
	Format String Vulnerability	1	11
	Race Condition Vulnerability	1	11
	Set-UID Program Vulnerability	1	11
	Chroot Sandbox Vulnerability	1	12
	Cross-Site Request Forgery Attack	1	-
	Cross-Site Scripting Attack	1	-
	SQL Injection Attack	1	5
	ClickJacking Attack	1	-
	TCP/IP Attacks	2	7, 22
	DNS Pharming Attacks	2	22
Exploration Labs (Linux-based)	Pack Sniffing & Spoofing	1	22
	Pluggable Authentication Module	1	3
	Web Access Control	1	-
	SYN Cookie	1	7, 22
	Linux Capability	1	4, 12
	Secret-Key Encryption	1	20
	One-Way Hash Function	1	21
	Public-Key Infrastructure	1	21, 23
Design and Implementation Labs	Virtual Private Network (Linux)	4	22
	IPSec (Minix)	4	22
	Firewall (Linux)	2	9
	Firewall (Minix)	2	9
	Role-Based Access Control (Minix)	4	4
	Capability-Based Access Control (Minix)	3	4
	Encrypted File System (Minix)	4	12
	Address Space Randomization (Minix)	2	12
	Set-RandomUID Sandbox (Minix)	1	12

## Mapping SEED Labs to Textbook Chapters

*Introduction Computer Security*  
 Michael T. Goodrich & Roberto Tamassia  
 Addison-Wesley, 2011



Types	Labs	Time (week)	Chapters
Vulnerability and Attack Labs (Linux-based)	Buffer Overflow Vulnerability	1	3
	Return-to-libc Attack	1	3
	Format String Vulnerability	1	3
	Race Condition Vulnerability	1	3
	Set-UID Program Vulnerability	1	3
	Chroot Sandbox Vulnerability	1	12
	Cross-Site Request Forgery Attack	1	7
	Cross-Site Scripting Attack	1	7
	SQL Injection Attack	1	7
	ClickJacking Attack	1	7
	TCP/IP Attacks	2	5
	DNS Pharming Attacks	2	6
Exploration Labs (Linux-based)	Pack Sniffing & Spoofing	1	5
	Pluggable Authentication Module	1	3
	Web Access Control	1	7
	SYN Cookie	1	5
	Linux Capability	1	3
	Secret-Key Encryption	1	8
	One-Way Hash Function	1	8
	Public-Key Infrastructure	1	8
Design and Implementation Labs	Virtual Private Network (Linux)	4	6
	IPSec (Minix)	4	6
	Firewall (Linux)	2	6
	Firewall (Minix)	2	6
	Role-Based Access Control (Minix)	4	9
	Capability-Based Access Control (Minix)	3	3
	Encrypted File System (Minix)	4	9
	Address Space Randomization (Minix)	2	-
	Set-RandomUID Sandbox (Minix)	1	13

## Mapping SEED Labs to Textbook Chapters

*Computer Security, 3<sup>rd</sup> edition*  
Dieter Gollmann  
Wiley, 2011



Types	Labs	Time (week)	Chapters
Vulnerability and Attack Labs (Linux-based)	Buffer Overflow Vulnerability	1	10
	Return-to-libc Attack	1	10
	Format String Vulnerability	1	10
	Race Condition Vulnerability	1	10
	Set-UID Program Vulnerability	1	7
	Chroot Sandbox Vulnerability	1	-
	Cross-Site Request Forgery Attack	1	18
	Cross-Site Scripting Attack	1	18
	SQL Injection Attack	1	10, 18
	ClickJacking Attack	1	18
	TCP/IP Attacks	2	17
	DNS Pharming Attacks	2	17
Exploration Labs (Linux-based)	Pack Sniffing & Spoofing	1	17
	Pluggable Authentication Module	1	4, 7
	Web Access Control	1	18
	SYN Cookie	1	17
	Linux Capability	1	5
	Secret-Key Encryption	1	14
	One-Way Hash Function	1	14
	Public-Key Infrastructure	1	15
Design and Implementation Labs	Virtual Private Network (Linux)	4	16
	IPSec (Minix)	4	16
	Firewall (Linux)	2	17
	Firewall (Minix)	2	17
	Role-Based Access Control (Minix)	4	5
	Capability-Based Access Control (Minix)	3	5
	Encrypted File System (Minix)	4	14
	Address Space Randomization (Minix)	2	-
	Set-RandomUID Sandbox (Minix)	1	-

## Mapping SEED Labs to Textbook Chapters

*Security in Computing, 4<sup>th</sup> Edition*  
 Charles P. Pfleeger & Shari Lawrence Pfleeger  
 Prentice Hall, 2006



Types	Labs	Time (week)	Chapters
Vulnerability and Attack Labs (Linux-based)	Buffer Overflow Vulnerability	1	3
	Return-to-libc Attack	1	3
	Format String Vulnerability	1	3
	Race Condition Vulnerability	1	3
	Set-UID Program Vulnerability	1	4
	Chroot Sandbox Vulnerability	1	3
	Cross-Site Request Forgery Attack	1	3
	Cross-Site Scripting Attack	1	3
	SQL Injection Attack	1	3, 6
	ClickJacking Attack	1	3
	TCP/IP Attacks	2	7
	DNS Pharming Attacks	2	7
Exploration Labs (Linux-based)	Pack Sniffing & Spoofing	1	7
	Pluggable Authentication Module	1	4
	Web Access Control	1	4, 7
	SYN Cookie	1	2, 7
	Linux Capability	1	4
	Secret-Key Encryption	1	2, 12
	One-Way Hash Function	1	2, 12
	Public-Key Infrastructure	1	2, 12
Design and Implementation Labs	Virtual Private Network (Linux)	4	2, 7
	IPSec (Minix)	4	2, 7
	Firewall (Linux)	2	7
	Firewall (Minix)	2	7
	Role-Based Access Control (Minix)	4	4
	Capability-Based Access Control (Minix)	3	4
	Encrypted File System (Minix)	4	2, 4
	Address Space Randomization (Minix)	2	4, 5
	Set-RandomUID Sandbox (Minix)	1	4

## Mapping SEED Labs to Textbook Chapters

*Introduction to Computer Security*  
 Matt Bishop  
 Addison-Wesley, 2004



Types	Labs	Time (week)	Chapters
Vulnerability and Attack Labs (Linux-based)	Buffer Overflow Vulnerability	1	20, 26
	Return-to-libc Attack	1	20, 26
	Format String Vulnerability	1	20, 26
	Race Condition Vulnerability	1	20, 26
	Set-UID Program Vulnerability	1	14
	Chroot Sandbox Vulnerability	1	20, 26
	Cross-Site Request Forgery Attack	1	20, 23, 26
	Cross-Site Scripting Attack	1	20, 23, 26
	SQL Injection Attack	1	20, 23, 26
	ClickJacking Attack	1	20, 23, 26
	TCP/IP Attacks	2	20, 23, 26
	DNS Pharming Attacks	2	20, 23, 26
Exploration Labs (Linux-based)	Pack Sniffing & Spoofing	1	23
	Pluggable Authentication Module	1	11
	Web Access Control	1	4, 14
	SYN Cookie	1	23
	Linux Capability	1	12, 14, 17
	Secret-Key Encryption	1	8-10
	One-Way Hash Function	1	8-10
	Public-Key Infrastructure	1	8-10
Design and Implementation Labs	Virtual Private Network (Linux)	4	8-10, 17, 23
	IPSec (Minix)	4	8-10, 17, 23
	Firewall (Linux)	2	17, 23
	Firewall (Minix)	2	17, 23
	Role-Based Access Control (Minix)	4	12, 14, 17
	Capability-Based Access Control (Minix)	3	12, 14, 17
	Encrypted File System (Minix)	4	8-10, 17
	Address Space Randomization (Minix)	2	22, 24, 26
	Set-RandomUID Sandbox (Minix)	1	19

## Mapping SEED Labs to Textbook Chapters

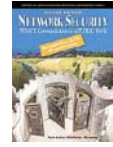
*Computer Security: Art and Science*  
 Matt Bishop  
 Addison-Wesley, 2002



Types	Labs	Time (week)	Chapters
Vulnerability and Attack Labs (Linux-based)	Buffer Overflow Vulnerability	1	23, 29
	Return-to-libc Attack	1	23, 29
	Format String Vulnerability	1	23, 29
	Race Condition Vulnerability	1	23, 29
	Set-UID Program Vulnerability	1	15
	Chroot Sandbox Vulnerability	1	23, 29
	Cross-Site Request Forgery Attack	1	23, 26, 29
	Cross-Site Scripting Attack	1	23, 26, 29
	SQL Injection Attack	1	23, 26, 29
	ClickJacking Attack	1	23, 26, 29
	TCP/IP Attacks	2	23, 26, 29
	DNS Pharming Attacks	2	23, 26, 29
Exploration Labs (Linux-based)	Pack Sniffing & Spoofing	1	26
	Pluggable Authentication Module	1	12
	Web Access Control	1	4, 15
	SYN Cookie	1	26
	Linux Capability	1	13, 15, 19
	Secret-Key Encryption	1	9, 10, 11
	One-Way Hash Function	1	9, 10, 11
	Public-Key Infrastructure	1	9, 10, 11
Design and Implementation Labs	Virtual Private Network (Linux)	4	9-11, 19, 26
	IPSec (Minix)	4	9-11, 19, 26
	Firewall (Linux)	2	19, 26
	Firewall (Minix)	2	19, 26
	Role-Based Access Control (Minix)	4	13, 15, 19
	Capability-Based Access Control (Minix)	3	13, 15, 19
	Encrypted File System (Minix)	4	9-11, 13, 19
	Address Space Randomization (Minix)	2	25, 27, 29
	Set-RandomUID Sandbox (Minix)	1	22

## Mapping SEED Labs to Textbook Chapters

*Network Security: Private Communication in a Public World, 2<sup>nd</sup> ed.*  
 Charlie Kaufman, Radia Perlman, & Mike Speciner  
 Prentice Hall, 2002



Types	Labs	Time (week)	Chapters
Vulnerability and Attack Labs (Linux-based)	Buffer Overflow Vulnerability	1	-
	Return-to-libc Attack	1	-
	Format String Vulnerability	1	-
	Race Condition Vulnerability	1	-
	Set-UID Program Vulnerability	1	-
	Chroot Sandbox Vulnerability	1	-
	Cross-Site Request Forgery Attack	1	25
	Cross-Site Scripting Attack	1	25
	SQL Injection Attack	1	-
	ClickJacking Attack	1	25
	TCP/IP Attacks	2	-
	DNS Pharming Attacks	2	-
Exploration Labs (Linux-based)	Pack Sniffing & Spoofing	1	5
	Pluggable Authentication Module	1	9, 10
	Web Access Control	1	25
	SYN Cookie	1	5
	Linux Capability	1	-
	Secret-Key Encryption	1	2-6
	One-Way Hash Function	1	2-6
	Public-Key Infrastructure	1	2-6
Design and Implementation Labs	Virtual Private Network (Linux)	4	2-5, 17
	IPSec (Minix)	4	2-5, 17
	Firewall (Linux)	2	23
	Firewall (Minix)	2	23
	Role-Based Access Control (Minix)	4	-
	Capability-Based Access Control (Minix)	3	-
	Encrypted File System (Minix)	4	2-5
	Address Space Randomization (Minix)	2	-
	Set-RandomUID Sandbox (Minix)	1	-