

ITT Technical Institute  
**IS4550**  
**Security Policies and Implementation**

**SYLLABUS**

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**Credit hours:** 4.5

**Contact/Instructional hours:** 60 (30 Theory Hours, 30 Lab Hours)

**Prerequisite(s) and/or Corequisite(s):**

Prerequisites: IS3110 Risk Management in Information Technology Security or equivalent

**Course Description:**

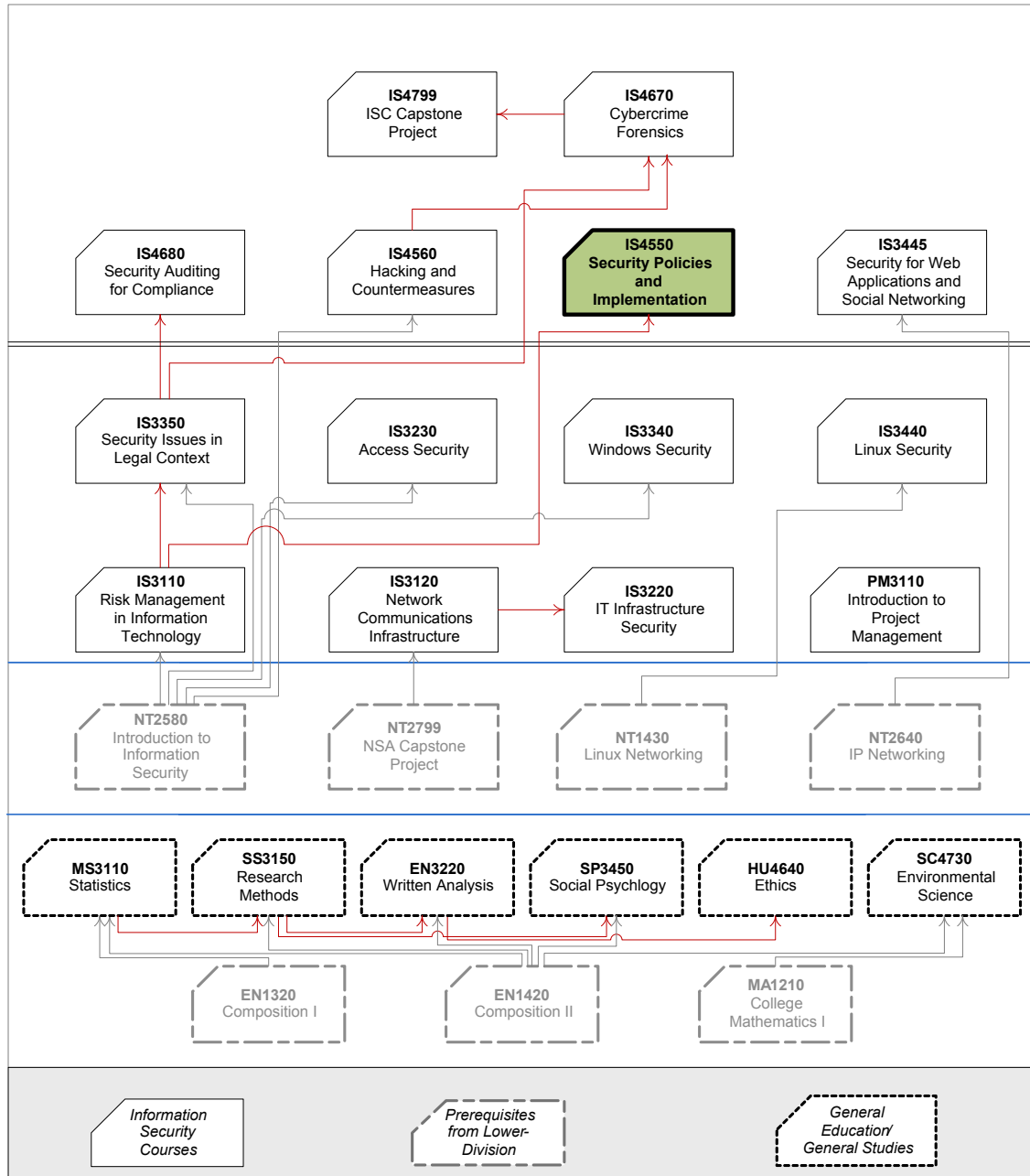
This course explores security policies that protect and maintain an organization's network and information systems assets. Topics include the effects of organizational culture, behavior and communications styles on generating, enforcing and maintaining security policies.

## Where Does This Course Belong?

This course is required for the Bachelor of Science in Information Systems Security program. This program covers the following core areas:

- Foundational Courses
- Technical Courses
- BSISS Project

The following diagram demonstrates how this course fits in the program:



## Course Summary

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### Major Instructional Areas

1. Security policy requirements
2. Security policy framework
3. Creation of security policies
4. Implementation issues
5. Security policy controls

### Course Objectives

1. Identify the role of an information systems security (ISS) policy framework in overcoming business challenges.
2. Analyze how security policies help mitigate risks and support business processes in various domains in the information technology (IT) infrastructure.
3. Describe the components and basic requirements for creating a security policy framework.
4. Describe the different methods, roles, responsibilities, and accountabilities of personnel, along with the governance and compliance of security policy framework.
5. Describe the different ISS policies associated with the user domain.
6. Describe the different ISS policies associated with the IT infrastructure.
7. Describe the different ISS policies associated with risk management.
8. Describe the different ISS policies associated with incident response teams (IRT).
9. Describe different issues related to implementing and enforcing ISS policies.
10. Describe the different issues related to defining, tracking, monitoring, reporting, automating, and configuration of compliance systems and emerging technologies.

## Learning Materials and References

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### Required Resources

Textbook Package	New to this Course	Carried over from Previous Course(s)	Required for Subsequent Course(s)
Johnson, Rob, and Merkow. <i>Security Policies and Implementation Issues</i> . 1 <sup>st</sup> ed. Sudbury, MA: Jones & Bartlett, 2011.	▪		
Printed IS4550 Student Lab Manual	▪		
ISS Mock IT Infrastructure (1) – Cisco Core Backbone Network consisting of Cisco 2811 routers, 2950/2960 catalyst switches, ASA 5505s for classroom labs that require a live, IP network. (For onsite only)	▪	▪	▪
ISS Mock IT Infrastructure (2) – VM Server Farm (2 Microsoft Windows Servers and 2 Ubuntu Linux Servers) for classroom VM labs. (For both onsite and online)	▪	▪	▪
ISS Mock IT Infrastructure (2) – VM Workstation (Microsoft Windows XP Professional Workstation with Core ISS Apps and Tools) for classroom VM labs. (For both onsite and online)	▪	▪	▪

(1) The following presents the core ISS Cisco core backbone network components needed for some of the equipment-based labs for onsite delivery only. (Note: video labs will be used for online delivery):

- Cisco 2811 Routers
- Cisco 2950/2960 Catalyst Switches
- Cisco ASA 5505 Security Appliances
- Simulated WAN Infrastructure
- EGP using BGP4 or IGP using EIGRP
- Layer 2 Switching with VLAN Configurations
- Telnet and SSH version 2 for Remote Access
- Inside and Outside VLANs
- DMZ VLAN

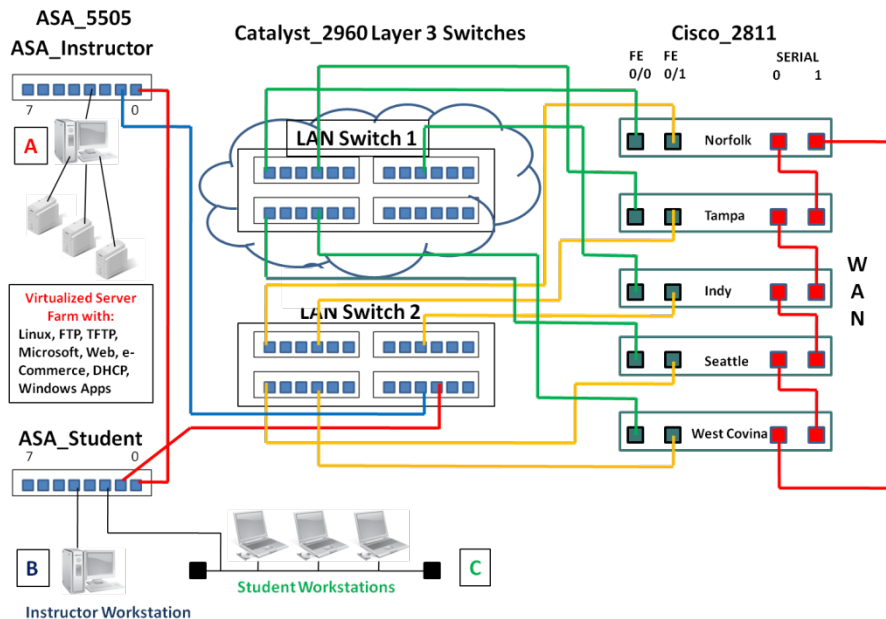


Figure 1 – ISS Cisco Core Backbone Network

- (2) The following lists the core ISS VM server farm and VM workstation OS, applications, and tools required for this course for both onsite and online course deliveries:

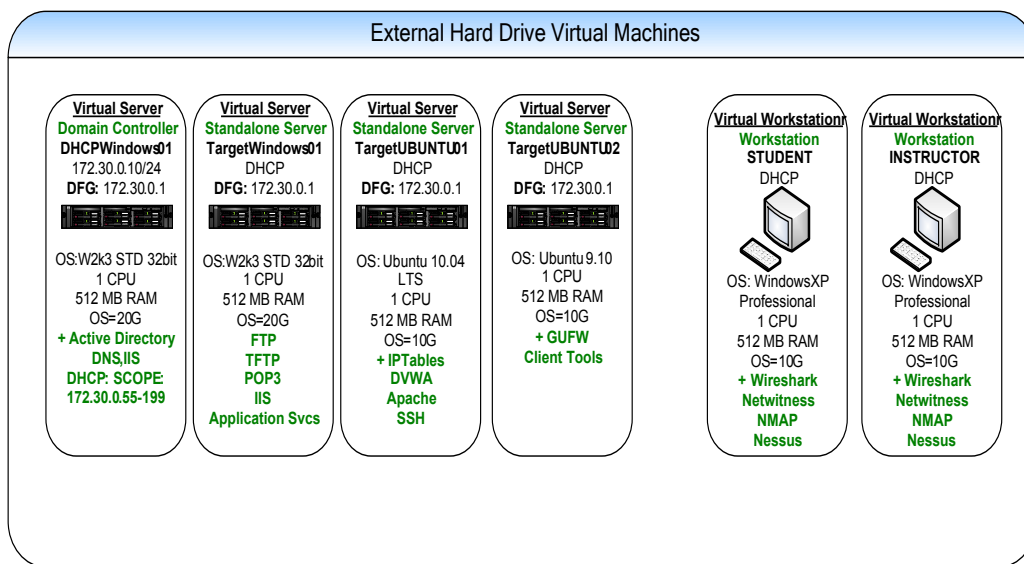


Figure 2 – ISS Core VM Server Farm & VM Workstations

**Note #1:** ISS onsite students can obtain their removable hard drive directly from their ITT campus. ISS online students will be required to download the core ISS VM server farm and VM workstations directly to their personal computer for installation. The ITT Onsite or Online Instructor will provide students with the specific instructions and procedures for how to obtain the core ISS VM server farm and workstation image files during the first week of class.

(3) The following lists the new VMs, applications, and tools required to perform the equipment-based labs for this course for both onsite and online deliveries:

1. New VM for server farm: "VulnerableXP01". This VM is a vulnerable Microsoft Windows Server 2003 Standard Edition server used for performing attacks.
2. New VM for server farm: "Backtrack01". A Backtrack 4 Ubuntu Server pre-loaded with the following applications and tools:
  - a. Metasploit with required plug-ins
  - b. Kismet
  - c. Aircrack-ng
  - d. Aircsnort
  - e. Snort
  - f. MySQL
  - g. BASE
3. New VM that Replaces the Old "TargetUbuntu01" VM on the VM server farm. An Ubuntu Server 10.4 VM pre-loaded with the following applications and tools:
  - a. Damn Vulnerable Web App (DVWA)
  - b. ClamAV Installed
  - c. Rootkit Hunter: [http://www.rootkit.nl/projects/rootkit\\_hunter.html](http://www.rootkit.nl/projects/rootkit_hunter.html)
  - d. Chrootkit: <http://www.chkrootkit.org/>
  - e. Appropriate rootkit tools can be found at:  
<http://www.packetstormsecurity.org/UNIX/penetration/rootkits/indexdate.html>
  - f. Infected with EICAR
  - g. tcpdump
  - h. Common Linux tools such as strings, sed and grep
4. Tools Directory: A directory called "tools" which contains the binary installation files for each tool covered in the course, including:
  - a. Infected with EICAR
  - b. ClamAV Installed
  - c. Rootkit Hunter: [http://www.rootkit.nl/projects/rootkit\\_hunter.html](http://www.rootkit.nl/projects/rootkit_hunter.html)
  - d. Chrootkit: <http://www.chkrootkit.org/>
  - e. Appropriate rootkit tools can be found at:  
<http://www.packetstormsecurity.org/UNIX/penetration/rootkits/indexdate.html>
  - f. Wireshark
  - g. NetWitness Investigator
  - h. FileZilla FTP client/Server
  - i. Putty SSH client
  - j. Nessus<sup>®1</sup>

<sup>1</sup> Nessus<sup>®</sup> is a Registered Trademark of Tenable Network Security, Inc.

- k. Zenmap
- l. MD5sum
- m. SHA1sum
- n. GnuPG (Gnu Privacy Guard)
- o. OpenSSL
- p. VMware Player

**Note #2:** Installation instructions for installing these new VMs, applications and tools will be provided by the ISS onsite or online Instructor during day 1/ week 1 of the course.

## Recommended Resources

### Books, Professional Journals

Please use the following author's names, book/article titles and/or keywords to search in the ITT Tech Virtual Library for supplementary information to augment your learning in this subject:

#### Books

#### Periodicals

#### EbscoHost

#### Books24X7

Sandy Bacik Building an Effective Information Security Policy Architecture (Chapter 1 & 7)

Seymour Bosworth, et al

Security Handbook, 5th ed. (Chapters 3, 21 and 26)

Debra S. Herrmann

Complete Guide to Security and Privacy Metrics: Measuring Regulatory Compliance, Operational Resilience, and ROI (Chapters 3, 4 and 5)

Ronald L. Krutz, et al

The CISM Prep Guide: Mastering the Five Domains of Information Security Management (Chapters 2, 5 and Appendix B)

Harold F. Tipton, et al

Information Security Management Handbook, 6th ed. (Chapters 2, 5, 7, 14, 16, 41 and 42)

John R. Vacca

Computer and Information Security Handbook (Chapter 15)



Jeffrey L. Ott

“Information security in the new millennium”, Information Systems Security, Mar/Apr2000, Vol. 9 Issue 1, (AN 2881038)

Kenneth A. Bamberger

Texas Law Review, Mar2010, Vol. 88 Issue 4, “Technologies of Compliance: Risk and Regulation in a Digital Age” (Pages 669-739), (AN 48969651)

A. S. Vydrin

“Theoretical aspects of information security”, Journal of Mathematical Sciences, Jan2009, Vol. 156 Issue 2, (Pages 261-275), (AN 36034907)

**Keywords:**

Policies

Regulations

Laws

Standards

Information systems security

Information assurance

Four information security controls

U.S. compliancy laws and industry standards

Risk management

Risk mitigation

Policy management and maintenance

Responsibilities of and accountability

Users

Privileged users

Local Area Network (LAN)

Wide Area Network (WAN)

Telecommunications

Acceptable use policy (AUP)

Business impact analysis (BIA)

Business continuity planning (BCP)

Disaster recovery planning (DRP)

Incident response

## Course Plan

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### Instructional Methods

This course is designed to promote learner-centered activities and support the development of cognitive strategies and competencies necessary for effective task performance and critical problem solving. The course utilizes individual and group learning activities, performance-driven assignments, problem-based cases, projects, and discussions. These methods focus on building engaging learning experiences conducive to development of critical knowledge and skills that can be effectively applied in professional contexts.

### Suggested Learning Approach

In this course, you will be studying individually and within a group of your peers. As you work on the course deliverables, you are encouraged to share ideas with your peers and instructor, work collaboratively on projects and team assignments, raise critical questions, and provide constructive feedback.

Use the following advice to receive maximum learning benefits from your participation in this course:

DO	DON'T
<ul style="list-style-type: none"> <li>▪ Do take a proactive learning approach</li> <li>▪ Do share your thoughts on critical issues and potential problem solutions</li> <li>▪ Do plan your course work in advance</li> <li>▪ Do explore a variety of learning resources in addition to the textbook</li> <li>▪ Do offer relevant examples from your experience</li> <li>▪ Do make an effort to understand different points of view</li> <li>▪ Do connect concepts explored in this course to real-life professional situations and your own experiences</li> </ul>	<ul style="list-style-type: none"> <li>▪ Don't assume there is only one correct answer to a question</li> <li>▪ Don't be afraid to share your perspective on the issues analyzed in the course</li> <li>▪ Don't be negative towards the points of view that are different from yours</li> <li>▪ Don't underestimate the impact of collaboration on your learning</li> <li>▪ Don't limit your course experience to reading the textbook</li> <li>▪ Don't postpone your work on the course deliverables – work on small assignment components every day</li> </ul>

## Course Outline

Unit #	Unit Title	Assigned Readings	Graded Activities			
			Grading Category	#	Activity Title	Grade Allocation (% of all graded work)
1	Information Security Policy Management	<i>Security Policies and Implementation Issues:</i> <ul style="list-style-type: none"> <li>▪ Chapter 1</li> <li>▪ Chapter 2</li> <li>▪ Chapter 3</li> </ul>	Discussion	1.1	Importance of Security Policies	1
			Lab	1.2	Craft an Organization-Wide Security Management Policy for Acceptable Use	2
			Assignment	1.3	Security Policies Overcoming Business Challenges	2
2	Risk Mitigation and Business Support Processes	<i>Security Policies and Implementation Issues:</i> <ul style="list-style-type: none"> <li>▪ Chapter 4</li> <li>▪ Chapter 5</li> </ul>	Discussion	2.1	Risk Mitigation	1
			Lab	2.2	Develop an Organization-Wide Policy Framework Implementation Plan	2
			Assignment	2.3	Good Policy Implementation	2
3	Policies, Standards, Procedures, and Guidelines	<i>Security Policies and Implementation Issues:</i> <ul style="list-style-type: none"> <li>▪ Chapter 6</li> <li>▪ Chapter 7</li> </ul>	Discussion	3.1	Business Considerations	1
			Lab	3.2	Define an Information Systems Security Policy Framework for an IT Infrastructure	2
			Assignment	3.3	Security Policy Frameworks	2

Unit #	Unit Title	Assigned Readings	Graded Activities			
			Grading Category	#	Activity Title	Grade Allocation (% of all graded work)
			4	Information Systems Security Policy Framework	<i>Security Policies and Implementation Issues:</i> ▪ Chapter 8	Discussion
			Lab	4.2	Craft a Layered Security Management Policy - Separation of Duties	2
			Assignment	4.3	Security Policy Creation	2
5	User Policies	<i>Security Policies and Implementation Issues:</i> ▪ Chapter 9	Discussion	5.1	Best Practices for User Policies	1
			Lab	5.2	Craft an Organization-Wide Security Awareness Policy	2
			Assignment	5.3	Create User Policy	2
6	IT Infrastructure Security Policies	<i>Security Policies and Implementation Issues:</i> ▪ Chapter 10	Discussion	6.1	IT Infrastructure Security Policies	1
			Lab	6.2	Define a Remote Access Policy to Support Remote Healthcare Clinics	2
			Assignment	6.3	IT Infrastructure Policies	2

Unit #	Unit Title	Assigned Readings	Graded Activities			
			Grading Category	#	Activity Title	Grade Allocation (% of all graded work)
7	Risk Management	<i>Security Policies and Implementation Issues:</i> ▪ Chapter 11	Discussion	7.1	Business Impact Analysis (BIA), Business Continuity Plan (BCP), and Disaster Recovery Plan (DRP)	1
			Lab	7.2	Identify Necessary Policies for Business Continuity - BIA & Recovery Time Objectives	2
			Assignment	7.3	Risk Management in a Business Model	2
8	Incident Response Team Policies	<i>Security Policies and Implementation Issues:</i> ▪ Chapter 12	Discussion	8.1	Support Services	1
			Lab	8.2	Craft a Security or Computer Incident Response Policy – CIRT Response Team	2
			Assignment	8.3	Create an Incident Response Policy	2
9	Implementing and Maintaining an IT Security Policy Framework	<i>Security Policies and Implementation Issues:</i> ▪ Chapter 13 ▪ Chapter 14	Discussion	9.1	Information Dissemination—How to Educate Employees	1
			Lab	9.2	Assess and Audit an Existing IT Security Policy Framework Definition	2
			Assignment	9.3	Policy Monitoring and Enforcement Strategy	2

Unit #	Unit Title	Assigned Readings	Graded Activities			
			Grading Category	#	Activity Title	Grade Allocation (% of all graded work)
			10	Automated Policy Compliance Systems	<i>Security Policies and Implementation Issues:</i> ▪ Chapter 15	Discussion
			Lab	10.2	Align an IT Security Policy Framework to the 7Domains of a Typical IT Infrastructure	2
			Assignment	10.3	Automated Policy Compliance Systems	2
11	Course Review and Final Examination	N/A	Project	11.1	Department of Defense (DoD) Ready†	25
			Exam	11.2	Final Exam	25

† Candidate for ePortfolio

## Evaluation and Grading

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### Evaluation Criteria

The graded assignments will be evaluated using the following weighted categories:

Category	Weight
Discussion	10
Lab	20
Assignment	20
Project	25
Exam	25
<b>TOTAL</b>	<b>100%</b>

### Grade Conversion

The final grades will be calculated from the percentages earned in the course, as follows:

Grade	Percentage	Credit
A	90–100%	4.0
B+	85–89%	3.5
B	80–84%	3.0
C+	75–79%	2.5
C	70–74%	2.0
D+	65–69%	1.5
D	60–64%	1.0
F	<60%	0.0

## Academic Integrity

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All students must comply with the policies that regulate all forms of academic dishonesty, or academic misconduct, including plagiarism, self-plagiarism, fabrication, deception, cheating, and sabotage. For more information on the academic honesty policies, refer to the Student Handbook.

(End of Syllabus)