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SANS Dallas 2016

August 8-13

SANS OFFERS HANDS-ON, IMMERSION-STYLE

INFORMATION SECURITY TRAINING

TAUGHT BY REAL-WORLD PRACTITIONERS

Protect your company and advance your career with information security training from SANS!

Seven courses on

CYBER DEFENSE

PEN TESTING

DIGITAL FORENSICS

IT AUDIT

"SANS training is superior to other training programs and far exceeded my expectations!"

-Paul Petrasko,
Bemis Company, Inc.

GIAC-Approved Training

REGISTER AT

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SAVE $400

by registering and paying early!

See page 13 for more details.

SANS Instructors

SANS instructors are real-world practitioners who specialize in the subjects they teach. All instructors undergo rigorous training and testing in order to teach SANS courses. This guarantees that what you learn in class will be up to date and relevant to your job. The SANS Dallas 2016 lineup of instructors includes:

Matt Bromiley
SANS Instructor

Christopher Crowley
Certified Instructor

Kevin Fiscus
Certified Instructor

Philip Hagen
Certified Instructor

Jonathan Ham
Certified Instructor

Paul A. Henry
Senior Instructor

David Hoelzer
Faculty Fellow

Anuj Soni
Certified Instructor

Evening Bonus Sessions

Take advantage of these extra evening presentations and add more value to your training. Learn more on page 9.

KEYNOTE: ***Evolving Threats*** – Paul A. Henry

Need for Speed: Malware Edition – Anuj Soni

The Tap House – Philip Hagen

DLP FAIL!!! Using Encoding, Steganography, and Covert Channels to Evade DLP and Other Critical Controls – Kevin Fiscus

SANS 8 Mobile Device Security Steps – Chris Crowley

The training campus for SANS Dallas 2016 is The Westin Dallas Downtown. The hotel venues feature wholesome, healthy menus to ensure you leave feeling better than when you arrived.

PAGE 13

Be sure to register and pay by June 15th for a $400 tuition discount!

Courses-at-a-Glance

		MON 8-8	TUE 8-9	WED 8-10	THU 8-11	FRI 8-12	SAT 8-13
SEC401	Security Essentials Bootcamp Style	Page 2					
SEC504	Hacker Tools, Techniques, Exploits, and Incident Handling	Page 3					
SEC560	Network Penetration Testing and Ethical Hacking	Page 4					
FOR572	Advanced Network Forensics and Analysis	Page 5					
FOR610	REM: Malware Analysis Tools and Techniques	Page 6					
MGT414	SANS Training Program for CISSP® Certification	Page 7					
AUD507	Auditing & Monitoring Networks, Perimeters, and Systems	Page 8					

The Value of SANS Training & YOU

EXPLORE

- Read this brochure and note the courses that will enhance your role in your organization
- Use the Career Roadmap (sans.org/media/security-training/roadmap.pdf) to plan your growth in your chosen career path

RELATE

- Consider how security needs in your workplace will be met with the knowledge you'll gain in a SANS course
- Know the education you receive will make you an expert resource for your team

VALIDATE

- Pursue a GIAC Certification after your training to validate your new expertise
- Add a NetWars challenge to your SANS experience to prove your hands-on skills

SAVE

- Register early to pay less using early-bird specials
- Consider the SANS Voucher Program or bundled course packages to make the most of your training budget

ADD VALUE

- Network with fellow security experts in your industry
- Prepare thoughts and questions before arriving to share with the group
- Attend SANS@Night talks and activities to gain even more knowledge and experience from instructors and peers alike

ALTERNATIVES

- If you cannot attend a live training event in person, attend the courses virtually via SANS Simulcast
- Use SANS OnDemand or vLive to complete the same training online from anywhere in the world, at any time

ACT

- Bring the value of SANS training to your career and organization by registering for a course today, or contact us at 301-654-SANS with further questions

Return on Investment

SANS live training is recognized as the best resource in the world for information security education. With SANS, you gain significant returns on your InfoSec investment. Through our intensive immersion classes, our training is designed to help your staff master the practical steps necessary for defending systems and networks against the most dangerous threats – the ones being actively exploited.

REMEMBER

the SANS promise:

You will be able to apply our information security training the day you get back to the office!

SEC401:
Security Essentials Bootcamp Style

SANS

Six-Day Program
Mon, Aug 8 - Sat, Aug 13
9:00am - 7:00pm (Days 1-5)
9:00am - 5:00pm (Day 6)
46 CPEs
Laptop Required
Instructor: Paul A. Henry

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"This course will give me valuable insight to support my job as a cybersecurity engineer."
-Erik Miller, Exelon Generation

Learn the most effective steps to prevent attacks and detect adversaries with actionable techniques that you can directly apply when you get back to work. Learn tips and tricks from the experts so that you can win the battle against the wide range of cyber adversaries that want to harm your environment.

Learn to build a security roadmap that can scale today and into the future.

SEC401: Security Essentials Bootcamp Style is focused on teaching you the essential information security skills and techniques you need to protect and secure your organization's critical information assets and business systems. This course will show you how to prevent your organization's security problems from being headline news in the *Wall Street Journal*!

With the rise of advanced persistent threats, it is almost inevitable that organizations will be targeted. Whether the attacker is successful in penetrating an organization's network depends on the effectiveness of the organization's defense. Defending against attacks is an ongoing challenge, with new threats emerging all of the time, including the next generation of threats. Organizations need to understand what really works in cybersecurity. What has worked, and will always work, is taking a risk-based approach to cyber defense. Before your organization spends a dollar of its IT budget or allocates any resources or time to anything in the name of cybersecurity, three questions must be answered:

- What is the risk?
- Is it the highest priority risk?
- What is the most cost-effective way to reduce the risk?

Security is all about making sure you focus on the right areas of defense. In SEC401 you will learn the language and underlying theory of computer and information security. You will gain the essential and effective security knowledge you'll need if you are given the responsibility for securing systems and/or organizations. This course meets both of the key promises SANS makes to our students: (1) You will learn up-to-the-minute skills you can put into practice immediately upon returning to work; and (2) You will be taught by the best security instructors in the industry.

PREVENTION IS IDEAL BUT DETECTION IS A MUST.

Who Should Attend

- Security professionals who want to fill the gaps in their understanding of technical information security
- Managers who want to understand information security beyond simple terminology and concepts
- Operations personnel who do not have security as their primary job function but need an understanding of security to be effective
- IT engineers and supervisors who need to know how to build a defensible network against attacks
- Forensic analysts, penetration testers, and auditors who need a solid foundation of security principles so they can be as effective as possible at their jobs
- Anyone new to information security with some background in information systems and networking

Paul A. Henry *SANS Senior Instructor*

Paul is one of the world's foremost global information security and computer forensic experts, with more than 20 years' experience managing security initiatives for Global 2000 enterprises and government organizations worldwide. Paul is a principal at vNet Security, LLC and is keeping a finger on the pulse of network security as the security and forensic analyst at Lumension Security. Throughout his career, Paul has played a key strategic role in launching new network security initiatives to meet our ever-changing threat landscape. He also advises and consults on some of the world's most challenging and high-risk information security projects, including the National Banking System in Saudi Arabia, the Reserve Bank of Australia, the U.S. Department of Defense's Satellite Data Project, and both government and telecommunications projects throughout Southeast Asia. Paul is frequently cited by major publications as an expert in perimeter security, incident response, computer forensics, and general security trends, and serves as an expert commentator for network broadcast outlets such as FOX, NBC, CNN, and CNBC. In addition, Paul regularly authors thought leadership articles on technical security issues, and his expertise and insight help shape the editorial direction of key security publications such as the *Information Security Management Handbook*, to which he is a consistent contributor. Paul is a featured speaker at seminars and conferences worldwide, delivering presentations on diverse topics such as anti-forensics, network access control, cyber crime, DDoS attack risk mitigation, perimeter security, and incident response. @phenrycissp

SEC504:

Hacker Tools, Techniques, Exploits, and Incident Handling

SANS

Six-Day Program
Mon, Aug 8 - Sat, Aug 13
9:00am - 7:15pm (Day 1)
9:00am - 5:00pm (Days 2-6)
37 CPEs
Laptop Required
Instructor:
Christopher Crowley

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"If you love cybersecurity and learning how exploits work, you NEED this course."
-Jaid K., U.S. Navy

The Internet is full of powerful hacking tools and bad guys using them extensively. If your organization has an Internet connection or one or two disgruntled employees (and whose does not!), your computer systems will get attacked. From the five, ten, or even one hundred daily probes against your Internet infrastructure to the malicious insider slowly creeping through your most vital information assets, attackers are targeting your systems with increasing viciousness and stealth. As defenders, it is essential we understand these hacking tools and techniques.

Who Should Attend

- Incident handlers
- Leaders of incident handling teams
- System administrators who are on the front lines defending their systems and responding to attacks
- Other security personnel who are first responders when systems come under attack

"SEC504 teaches you methods for testing your defenses and how to identify weaknesses in your network and systems." -Rene Graf, Federal Home Loan Bank

This course will enable you to turn the tables on computer attackers by helping you understand their tactics and strategies in detail. It will give you hands-on experience in finding vulnerabilities and discovering intrusions, and equip you with a comprehensive incident handling plan. The course addresses the latest cutting-edge insidious attack vectors, the "oldie-but-goodie" attacks that are still prevalent, and everything in between. Instead of merely teaching a few hack attack tricks, it provides a time-tested, step-by-step process for responding to computer incidents, and a detailed description of how attackers undermine systems so you can prepare for, detect, and respond to them. In addition, the course explores the legal issues associated with responding to computer attacks, including employee monitoring, working with law enforcement, and handling evidence. Finally, students will participate in a hands-on workshop that focuses on scanning, exploiting, and defending systems. This will enable you to discover the holes in your system before the bad guys do!

The course is particularly well-suited to individuals who lead or are a part of an incident handling team. General security practitioners, system administrators, and security architects will benefit by understanding how to design, build, and operate their systems to prevent, detect, and respond to attacks.

Christopher Crowley *SANS Certified Instructor*

Christopher has 15 years of industry experience managing and securing networks. He currently works as an independent consultant in the Washington, DC area. His work experience includes penetration testing, computer network defense, incident response, and forensic analysis. He is the course author for SANS MGT535: Incident Response Team Management and holds the GSEC, GCIA, GCIH (gold), GCFA, GPEN, GREM, GMOB, and CISSP certifications. His teaching experience includes SEC401, SEC503, SEC504, SEC560, SEC575, SEC580, FOR585, and MGT535; Apache web server administration and configuration; and shell programming. He was awarded the SANS 2009 Local Mentor of the Year Award, which is given to SANS Mentors who excel in leading SANS Mentor Training classes in their local communities. @CCrowMontance

SEC560:

Network Penetration Testing and Ethical Hacking

SANS

Six-Day Program
Mon, Aug 8 - Sat, Aug 13
9:00am - 7:15pm (Day 1)
9:00am - 5:00pm (Days 2-6)
37 CPEs
Laptop Required
Instructor: Kevin Fiscus

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"This course provides validation and confirmation of your skills and concepts, and then blows your mind with super powers."
-Trip Hillman, Weaver LLP

As a cybersecurity professional, you have a unique responsibility to find and understand your organization's vulnerabilities, and to work diligently to mitigate them before the bad guys pounce. Are you ready? SANS SEC560, our flagship course for penetration testing, fully arms you to address this task head-on.

With comprehensive coverage of tools, techniques, and methodologies for network penetration testing, SEC560 truly prepares you to conduct high-value penetration testing projects step-by-step and end-to-end. Every organization needs skilled information security personnel who can find vulnerabilities and mitigate their effects, and this entire course is specially designed to get you ready for that role. The course starts with proper planning, scoping and recon, then dives deep into scanning, target exploitation, password attacks, and web app manipulation, with over 30 detailed hands-on labs throughout. The course is chock full of practical, real-world tips from some of the world's best penetration testers to help you do your job safely, efficiently…and masterfully.

Who Should Attend

- Security personnel whose job involves assessing networks and systems to find and remediate vulnerabilities
- Penetration testers
- Ethical hackers
- Defenders who want to better understand offensive methodologies, tools, and techniques
- Auditors who need to build deeper technical skills
- Red and blue team members
- Forensics specialists who want to better understand offensive tactics

"The course content is excellent and coherently organized. It will provide high value to my job." -Margarita Jauregui, Intel Corporation

SEC560 is designed to get you ready to conduct a full-scale, high-value penetration test – and on the last day of the course you'll do just that. After building your skills in comprehensive and challenging labs over five days, the course culminates with a final full-day, real-world penetration test scenario. You'll conduct an end-to-end pen test, applying knowledge, tools, and principles from throughout the course as you discover and exploit vulnerabilities in a realistic sample target organization, demonstrating the knowledge you've mastered in this course.

You will learn how to perform detailed reconnaissance, studying a target's infrastructure by mining blogs, search engines, social networking sites, and other Internet and intranet infrastructures. Our hands-on labs will equip you to scan target networks using best-of-breed tools. We won't just cover run-of-the-mill options and configurations, we'll also go over the lesser-known but super-useful capabilities of the best pen test toolsets available today. After scanning, you'll learn dozens of methods for exploiting target systems to gain access and measure real business risk. You'll dive deep into post-exploitation, password attacks, and web apps, pivoting through the target environment to model the attacks of real-world bad guys to emphasize the importance of defense in depth.

Kevin Fiscus *SANS Certified Instructor*

Kevin Fiscus is the founder of and lead consultant for Cyber Defense Advisors where he performs security and risk assessments, vulnerability and penetration testing, security program design, policy development and security awareness with a focus on serving the needs of small and mid-sized organizations. Kevin has over 20 years of IT experience and has focused exclusively for the past 12 years on information security. Kevin currently holds the CISA, GPEN, GREM, GMOB, GCED, GCFA-Gold, GCIA-Gold, GCIH, GAWN, GPPA, GCWN, GCSC-Gold, GSEC, SCSA, RCSE, and SnortCP certifications and is proud to have earned the top information security certification in the industry, the GIAC Security Expert. Kevin has also achieved the distinctive title of SANS Cyber Guardian for both red team and blue team. @kevinbfiscus

FOR572:
Advanced Network Forensics and Analysis

SANS

Six-Day Program
Mon, Aug 8 - Sat, Aug 13
9:00am - 5:00pm
36 CPEs
Laptop Required
Instructors: Matt Bromiley
Philip Hagen

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digital-forensics.sans.org

Matt Bromiley
SANS Instructor

To see Matt's bio, visit sans.org/event/dallas-2016/instructors

Forensic casework that does not include a network component is a rarity in today's environment. Performing disk forensics will always be a critical and foundational skill for this career, but overlooking the network component of today's computing architecture is akin to ignoring security camera footage of a crime as it was committed. Whether you handle an intrusion incident, data theft case, or employee misuse scenario, the network often has an unparalleled view of the incident. Its evidence can provide the proof necessary to show intent, or even definitively prove that a crime actually occurred.

Who Should Attend

- Incident response team members and forensicators
- Law enforcement officers, federal agents, and detectives
- Information security managers
- Network defenders
- IT professionals
- Network engineers
- Anyone interested in computer network intrusions and investigations
- Security Operations Center personnel and information security practitioners

FOR572: Advanced Network Forensics and Analysis was built from the ground up to cover the most critical skills needed to mount efficient and effective post-incident response investigations. We focus on the knowledge necessary to expand the forensic mindset from residual data on the storage media from a system or device to the transient communications that occurred in the past or continue to occur. Even if the most skilled remote attacker compromised a system with an undetectable exploit, the system still has to communicate over the network. Without command-and-control and data extraction channels, the value of a compromised computer system drops to almost zero. Put another way: ***Bad guys are talking – we'll teach you to listen.***

This course covers the tools, technology, and processes required to integrate network evidence sources into your investigations, with a focus on efficiency and effectiveness. You will leave this week with a well-stocked toolbox and the knowledge to use it on your first day back on the job. We will cover the full spectrum of network evidence, including high-level NetFlow analysis, low-level pcap exploration, ancillary network log examination, and more. We cover how to leverage existing infrastructure devices that may contain months or years of valuable evidence, as well as how to place new collection platforms while an incident is already under way.

Whether you are a consultant responding to a client's site, a law enforcement professional assisting victims of cyber crime and seeking prosecution of those responsible, or an on-staff forensic practitioner, this course offers hands-on experience with real-world scenarios that will help take your work to the next level. Previous SANS security curriculum students and other network defenders will benefit from the FOR572 perspective on security operations as they take on more incident response and investigative responsibilities. SANS forensics alumni from FOR408 and FOR508 can take their existing knowledge and apply it directly to the network-based attacks that occur daily. In FOR572, we solve the same caliber of real-world problems without any convenient hard drive or memory images.

Philip Hagen *SANS Certified Instructor*

Philip Hagen has been working in the information security field since 1998, running the full spectrum including deep technical tasks, management of an entire computer forensic services portfolio, and executive responsibilities. Currently, Phil is an Evangelist at Red Canary, where he engages with current and future customers of Red Canary's managed threat detection service to ensure their use of the service is best aligned for success in the face of existing and future threats. Phil started his security career while attending the U.S. Air Force Academy, with research covering both the academic and practical sides of security. He served in the Air Force as a communications officer at Beale AFB and the Pentagon. In 2003, Phil became a government contractor, providing technical services for various IT and information security projects. These included systems that demanded 24x7x365 functionality. He later managed a team of 85 computer forensic professionals in the national security sector. He provided forensic consulting services for law enforcement, government, and commercial clients prior to joining the Red Canary team. Phil is the course lead and co-author of FOR572: Advanced Network Forensics and Analysis. @PhilHagen

FOR610:

Reverse-Engineering Malware: Malware Analysis Tools and Techniques

SANS

Six-Day Program
Mon, Aug 8 - Sat, Aug 13
9:00am - 5:00pm
36 CPEs
Laptop Required
Instructor: Anuj Soni

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SANS Technology Institute

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with this course
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digital-forensics.sans.org

"This training is valuable because it covers many different tools and methods for analyzing malware."
-Scott Sabo, BASF Corp.

"Wow! What a course, and one of the best I have attended in my learning career."
-Srinath Kannan, Accenture

This popular malware analysis course helps forensic investigators, incident responders, security engineers and IT administrators acquire practical skills for examining malicious programs that target and infect Windows systems. Understanding the capabilities of malware is critical to an organization's ability to derive the threat intelligence it needs to respond to information security incidents and fortify defenses. The course builds a strong foundation for analyzing malicious software using a variety of system and network monitoring utilities, a disassembler, a debugger and other tools useful for turning malware inside-out.

Who Should Attend

- Individuals who have dealt with incidents involving malware and want to learn how to understand key aspects of malicious programs
- Technologists who have informally experimented with aspects of malware analysis prior to the course and are looking to formalize and expand their expertise in this area
- Forensic investigators and IT practitioners looking to expand their skillsets and learn how to play a pivotal role in the incident response process

The course begins by covering fundamental aspects of malware analysis. You will learn how to set up an inexpensive and flexible laboratory to understand the inner workings of malicious software and uncover characteristics of real-world malware samples. Then you will learn to examine the specimens' behavioral patterns and code. The course continues by discussing essential x86 assembly language concepts. You will examine malicious code to understand its key components and execution flow. Additionally, you will learn to identify common malware characteristics by looking at suspicious Windows API patterns employed by bots, rootkits, keyloggers, downloaders, and other types of malware.

This course will teach you how to handle self-defending malware. You'll learn how to bypass the protection offered by packers, and other anti-analysis methods. In addition, given the frequent use of browser malware for targeting systems, you will learn practical approaches to analyzing malicious browser scripts and deobfuscating JavaScript and VBScript to understand the nature of the attack.

You will also learn how to analyze malicious documents that take the form of Microsoft Office and Adobe PDF files. Such documents act as a common infection vector and may need to be examined when dealing with large-scale infections as well as targeted attacks. The course also explores memory forensics approaches to examining malicious software, especially useful if it exhibits rootkit characteristics.

The course culminates with a series of Capture-the-Flag challenges designed to reinforce the techniques learned in class and provide additional opportunities to learn practical malware analysis skills in a fun setting.

Hands-on workshop exercises are a critical aspect of this course and allow you to apply malware analysis techniques by examining malware in a lab that you control. When performing the exercises, you will study the supplied specimens' behavioral patterns and examine key portions of their code. To support these activities, you will receive pre-built Windows and Linux virtual machines that include tools for examining and interacting with malware.

Anuj Soni *SANS Certified Instructor*

Anuj Soni is a Senior Incident Responder at Booz Allen Hamilton, where he leads forensic, malware, and network analysis efforts to investigate security incidents. Since entering the information security field in 2005, Anuj has performed numerous intrusion investigations to help government and commercial clients mitigate attacks against the enterprise. His malware hunt skills and technical analysis abilities have resulted in the successful identification, containment, and remediation of multiple threat actor groups. Anuj has analyzed over 400 malware samples to assess function, purpose, and impact, and his recommendations have improved the security posture of the organizations he supports. @asoni

MGT414:

SANS Training Program for CISSP® Certification

SANS

Six-Day Program
Mon, Aug 8 - Sat, Aug 13
9:00am - 7:00pm (Day 1)
8:00am - 7:00pm (Days 2-5)
8:00am - 5:00pm (Day 6)
46 CPEs
Laptop NOT Needed
Instructor: Jonathan Ham

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WITH THIS COURSE
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"This course has been fantastic in terms of boiling down years of IT security trends and best practices into a week of learning."
-Eric Pavlov, InnoMark

SANS MGT414: SANS Training Program for CISSP® Certification is an accelerated review course that has been specifically updated to prepare you to pass the 2015 version of the CISSP® exam.

Course authors Eric Conrad and Seth Misenar have revised MGT414 to take into account the 2015 updates to the CISSP® exam and prepare students to navigate all types of questions included in the new version.

MGT414 focuses solely on the eight domains of knowledge as determined by (ISC)² that form a critical part of the CISSP® exam. Each domain of knowledge is dissected into its critical components, and those components are then discussed in terms of their relationship with one another and with other areas of information security.

Who Should Attend

- Security professionals who want to understand the concepts covered in the CISSP® exam as determined by (ISC)²
- Managers who want to understand the critical areas of network security
- System, security, and network administrators who want to understand the pragmatic applications of the CISSP® eight domains
- Security professionals and managers looking for practical ways to apply the eight domains of knowledge to their current activities

You Will Be Able To:

- Understand the eight domains of knowledge that are covered on the CISSP® exam
- Analyze questions on the exam and be able to select the correct answer
- Apply the knowledge and testing skills learned in class to pass the CISSP® exam
- Understand and explain all of the concepts covered in the eight domains of knowledge
- Apply the skills learned across the eight domains to solve security problems when you return to work

Obtaining Your CISSP® Certification Consists of:

- Fulfilling minimum requirements for professional work experience
- Completing the Candidate Agreement
- Review of your résumé
- Passing the CISSP® 250 multiple-choice question exam with a scaled score of 700 points or greater
- Submitting a properly completed and executed Endorsement Form
- Periodic audit of CPEs to maintain the credential

Note:
The CISSP® exam itself is not hosted by SANS. You will need to make separate arrangements to take the CISSP® exam. Please note as well that the GISP exam offered by GIAC is NOT the same as the CISSP® exam offered by (ISC)².

Take advantage of the SANS CISSP® Get Certified Program currently being offered.
sans.org/special/cissp-get-certified-program

Jonathan Ham *SANS Certified Instructor*

Jonathan is an independent consultant who specializes in large-scale enterprise security issues ranging from policy and procedure to staffing and training, scalable prevention, detection, and response technology and techniques. With a keen understanding of ROI and TCO (and an emphasis on process over products), he has helped his clients achieve greater success for over 12 years, advising in both the public and private sectors, and from small upstarts to the Fortune 500. He's been commissioned to teach NCIS investigators how to use Snort, performed packet analysis from a facility more than 2,000 feet underground, and chartered and trained the CIRT for one of the largest U.S. federal agencies. He has held the CISSP, GSEC, GCIA, and GCIH certifications, and is a member of the GIAC Advisory Board. A former combat medic, Jonathan still spends some of his time practicing a different kind of emergency response — volunteering and teaching for both the National Ski Patrol and the American Red Cross. @jhamcorp

AUD507:

Auditing & Monitoring Networks, Perimeters, and Systems

SANS

Six-Day Program
Mon, Aug 8 - Sat, Aug 13
9:00am - 5:00pm
36 CPEs
Laptop Required
Instructor: David Hoelzer

giac.org

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sans.org/8140

Bundle OnDemand
WITH THIS COURSE
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"I was exposed to tools I didn't even know about, now I have a much better understanding of web apps." -Jennifer Harris, Leidos LLC

One of the most significant obstacles facing many auditors today is how exactly to go about auditing the security of an enterprise. What systems really matter? How should the firewall and routers be configured? What settings should be checked on the various systems under scrutiny? Is there a set of processes that can be put into place to allow an auditor to focus on the business processes rather than the security settings? All of these questions and more will be answered by the material covered in this course.

This course is specifically organized to provide a risk-driven method for tackling the enormous task of designing an enterprise security validation program. After covering a variety of high-level audit issues and general audit best practices, the students will have the opportunity to dive deep into the technical how-to for determining the key controls that can be used to provide a level of assurance to an organization. Tips on how to repeatedly verify these controls and techniques for automatic compliance validation are taken from real-world examples.

Who Should Attend

- Auditors seeking to identify key controls in IT systems
- Audit professionals looking for technical details on auditing
- Managers responsible for overseeing the work of an audit or security team
- Security professionals newly tasked with audit responsibilities
- System and network administrators looking to better understand what an auditor is trying to achieve, how auditors think, and how to better prepare for an audit
- System and network administrators seeking to create strong change control management and detection systems for the enterprise

"AUD507 provided me additional insight to the technical side of security auditing. Great course and a super instructor!" -Carlos E., U.S. Army

One of the struggles that IT auditors face today is helping management understand the relationship between the technical controls and the risks to the business that these controls address. In this course these threats and vulnerabilities are explained based on validated information from real-world situations. The instructor will take the time to explain how this can be used to raise the awareness of management and others within the organization to build an understanding of why these controls specifically and auditing in general are important. From these threats and vulnerabilities, we will explain how to build the ongoing compliance monitoring systems and automatically validate defenses through instrumentation and automation of audit checklists.

David Hoelzer *SANS Faculty Fellow*

David Hoelzer is the author of more than 20 sections of SANS courseware. He is an expert in a variety of information security fields, having served in most major roles in the IT and security industries over the past 25 years. Recently, David was called upon to serve as an expert witness for the Federal Trade Commission for ground-breaking GLBA Privacy Rule litigation. David has been highly involved in governance at the SANS Technology Institute, serving as a member of the Curriculum Committee as well as Audit Curriculum Lead. As a SANS instructor, David has trained security professionals from agencies such as the NSA and DHHS, Fortune 500 companies, various Department of Defense sites, national laboratories, and many colleges and universities. David is a research fellow for the Center for Cybermedia Research and for the Identity Theft and Financial Fraud Research Operations Center (ITFF/ROC). He also is an adjunct research associate for the UNLV Cybermedia Research Lab and a research fellow with the Internet Forensics Lab. David has written and contributed to more than 15 peer-reviewed books, publications, and journal articles. Currently, he serves as the principal examiner and director of research for Enclave Forensics, a New York/Las Vegas-based incident response and forensics company. He also serves as the chief information security officer for Cyber-Defense, an open-source security software solution provider. In the past, David served as the director of the GIAC Certification program, bringing the GIAC Security Expert certification to life. He holds a BS in IT, Summa Cum Laude, having spent time either attending or consulting for Stony Brook University, Binghamton University, and American Intercontinental University. @david_hoelzer

KEYNOTE: Evolving Threats – *Paul Henry*

For nearly two decades defenders have fallen into the "crowd mentality trap." They have simply settled on doing the same thing everyone else was doing, while at the same time attackers have clearly evolved both in terms of malware delivery vectors and attack methodology. Today our defenses focus primarily on the gateway and on attempting to outwit an attacker's delivery methods. This leaves us woefully exposed and, according to a recent Data Breach Report, has resulted in 3,765 incidents, 806 million records exposed, and $157 billion in data breach costs in only the past six years.

Need for Speed: Malware Edition – *Anuj Soni*

Performing malware analysis can be a thrilling activity, but it can also be time-consuming and tedious. During this talk, Anuj Soni will use real malware samples to propose strategies to accelerate the malicious code analysis process. Whether you're new to this topic area or familiar with its challenges, this discussion will give you an appreciation for reverse engineering and equip you with tips and tricks to speed up your investigation.

The Tap House – *Philip Hagen*

Packets move pretty fast. The field of Network Forensics needs to move fast, too. Whether you are investigating a known incident, hunting unidentified adversaries in your environment, or enriching forensic findings from disk- and memory-based examinations, it's critical to stay abreast of the latest developments in the discipline. In this SANS@Night talk, Phil Hagen will discuss some of the latest technologies, techniques, and tools that you'll want to know about in pursuit of forensication nirvana. Phil is also an avid craft beer fan, so there's a good chance you'll also learn something about a new national beer or an interesting local one. This presentation will be helpful for everyone who wants to keep up-to-date on the most cutting-edge facets of Network Forensics.

DLP FAIL!!! Using Encoding, Steganography, and Covert Channels to Evade DLP and Other Critical Controls – *Kevin Fiscus*

It's all about the information! Two decades after the movie *Sneakers*, the quote remains as relevant as ever, if not more so. The fact that someone hacks into an environment is interesting but not that relevant. What is important is what happens after the compromise. If the data are destroyed or modified, organizations are negatively impacted but the benefits to an attacker for destruction or alteration are somewhat limited. Stealing information, however, is highly profitable. Identity theft, espionage, and financial attacks involve the exfiltration of sensitive data. As a result, organizations deploy tools to detect and/or stop that data exfiltration. While these tools can be extremely valuable, many have serious weaknesses; attackers can encode, hide, or obfuscate the data, or can use secret communication channels. This session will talk about and demonstrate a range of these methods.

SANS 8 Mobile Device Security Steps – *Chris Crowley*

Every organization is challenged to rapidly deploy mobile device security. The SANS 8 Mobile Device Security Steps is a community-driven project to provide the most up-to-date information on the most effective strategies for securing mobile infrastructure. Chris Crowley will discuss the guidance provided in the 8 Steps, including user authentication and restricting unauthorized access, OS and application management, device monitoring, and key operational components for mobile device management.

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SANS DALLAS 2016

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