Ethical Student Hackers

Taster Session - Ethical Hacking

An Introduction to Web hacking



The Legal Bit

- The skills taught in these sessions allow identification and exploitation of security vulnerabilities in systems. We strive to give you a place to practice legally, and can point you to other places to practice. These skills should not be used on systems where you do not have explicit permission from the owner of the system. It is VERY easy to end up in breach of relevant laws, and we can accept no responsibility for anything you do with the skills learnt here.

- If we have reason to believe that you are utilising these skills against systems where you are not authorised you will be banned from our events, and if necessary the relevant authorities will be alerted.

- Remember, if you have any doubts as to if something is legal or authorised, just don't do it until you are able to confirm you are allowed to.



Code of Conduct

- Before proceeding past this point you must read and agree to our Code of Conduct - this is a requirement from the University for us to operate as a society.
- If you have any doubts or need anything clarified, please ask a member of the committee.
- Breaching the Code of Conduct = immediate ejection and further consequences.
- Code of Conduct can be found at https://shefesh.com/conduct

Who Are We?

We are a society that aims to teach you all about hacking!

Ethical Hacking is a fun activity that tests your problem solving and is highly relevant today

Our society runs weekly sessions (Mondays 18:00 - 19:30, location varies)

Each week we cover a different topic with theory and practical

We formed in 2018 and have had people of many disciplines in the society! Diversity makes better hackers :)

Membership is £4 for a year and £7 for two

Visit https://shefesh.com and click “Join Us!”

Or scan this QR code...



Our Committee

Oli
President



Robin
Secretary



Austin
Treasurer



Rachael
Inclusions & Publicity



Louis
Tech



Mat
Competitions



???
General Member

What *is* Hacking?

"The intellectual challenge of creatively overcoming the limitations of software systems or electronic hardware [...], to achieve novel and clever outcomes"

- Gehring, Verna (2004). The Internet in Public Life



What *is* Hacking?

Hacking can be thought of as problem solving in a creative way.

Outside of Cybersecurity, you may have been to a Hackathon or spent hours watching videos of “life hacks”.

In this society we talk about Computer Hacking!

But Cybersecurity involves Human Hacking too (aka Social Engineering)...

Anyone with a ‘hacker’s brain’ will be good at Cybersecurity.

And anyone with the motivation can learn it!

Hackers come from all sorts of backgrounds - you do not have to be a tech expert.



Other Fields of Cybersecurity

Cyber jobs don't just involve Ethical Hacking

- Policy and Assurance
- Malware Analysis & Threat Intelligence
- Security Operations Centre (SOC) Analysts
- Cyber Incident Response Teams (CIRT)
- SIEM Building
- Physical Security Testing
- Social Engineering
- Education & Outreach
- Academic research (Cryptography, Controls)

But it's good to know the basics of Ethical Hacking to inform your wider knowledge - even in defence, you must know your enemy!

You could work for a standards agency, law enforcement, or anything in between...

Web-Hacking



Inspecting a Webpage

Whistle stop tour of what you can do just with your browser

- View Source: Ctrl + U / Ctrl + Shift + C
  - Look for comments (<!-- ->)
  - Look for URLs in Forms (action=”/url”)
- View Network Traffic (Network Tab)
- View Cookies (Storage Tab)
- View Javascript (look for passwords, interesting functions)
- Look for hidden pages in /robots.txt

There’s plenty more possible with specialised tools, such as editing traffic on the fly and automatically discovering hidden webpages!



Web 101 - Common Website Flaws

Broken Access Control
- Not properly checking a user's permissions
- Accessing another user's data by changing an ID in a URL

Injection
- SQL injection, XSS (Cross-Site Scripting), Prompt injection (new!)

Authentication Failures
- Weak or easily guessable passwords
- Brute-force attacks
- Poor session management

Security Misconfiguration
- Default credentials left unchanged
- Debug mode enabled in production

Cryptographic Failures
- Weak or outdated encryption algorithms
- Hardcoded encryption keys
- Poorly protected passwords
- Exposing secrets in source code

Vulnerable / Outdated Packages
- Unpatched frameworks
- Malicious or compromised packages

Insecure Design
- Missing security controls
- Business logic flaws
- Lack of rate limiting

We'll explain this all in more detail on Monday! But this should give you a flavour of what is possible...

Now… Let’s do some Hacking

hts.shefesh.com

Visit this site in your browser

Can you find + download user’s personal info?

Slides: shefesh.com

Credentials

shefesh@shefesh.com
shefesh

Once you login the challenge begins!



Where to Learn More?

Our sessions! Join at https://shefesh.com and click ‘Join Us’

Fundamental Skills series: https://shefesh.com/wiki/fundamental-skills

Resources page: https://shefesh.com/wiki/resources

Try Hack Me: https://tryhackme.com (perfect for beginners)

Hack the Box: https://hackthebox.eu (more advanced, with less guidance, but more engaging)

Follow us on Twitter, Facebook, and Linkedin - and join our discord!

ethicalhackers@sheffield.ac.uk

Upcoming Sessions

What's up next?
www.shefesh.com/sessions

Activity Fair - 22/09/26 (Stall 26)

First Session! More Web Hacking:
28/09/26 18:00 - 19:30
Room: Workroom 3, The Diamond
(Bring a laptop!)

Any Questions?



www.shefesh.com

Thanks for coming!

