

EXTREME FREESTYLE HACKING

RTF 331R / RTF390N / 08120 / 08580

<http://www.actlab.utexas.edu/efh.shtml>

Instructor: Sandy Stone / sandy@actlab.utexas.edu

Home: 512.382.9933 / Cell: 512.695.6732

Office: The ACTLab / CMA 6.124 / Epoch / Madam Mam's

Teaching Assistant: Joey "Speed Demon" Lopez / jtl333@mail.utexas.edu

Cell: 512.413.7832

Class meets Thursdays 2:00 - 5:00pm / Lab meets Tuesdays 6:30 - 8:00pm

THIS IS OUR WORLD NOW. THE WORLD OF THE ELECTRON AND THE SWITCH. THE BEAUTY OF THE BAUD. WE MAKE USE OF A SERVICE ALREADY EXISTING WITHOUT PAYING FOR WHAT COULD BE DIRT-CHEAP IF IT WASN'T RUN BY PROFITEERING GLUTTONS. AND YOU CALL US CRIMINALS. WE EXPLORE. AND YOU CALL US CRIMINALS. WE SEEK AFTER KNOWLEDGE. AND YOU CALL US CRIMINALS. WE EXIST WITHOUT SKIN COLOR. WITHOUT NATIONALITY. WITHOUT RELIGIOUS BIAS. AND YOU CALL US CRIMINALS. YOU BUILD ATOMIC BOMBS. YOU WAGE WARS. YOU MURDER. CHEAT. AND LIE TO US AND TRY TO MAKE US BELIEVE IT'S FOR OUR OWN GOOD. YET WE'RE THE CRIMINALS.

YES, I AM A CRIMINAL. MY CRIME IS THAT OF CURIOSITY. MY CRIME IS THAT OF JUDGING PEOPLE BY WHAT THEY SAY AND THINK. NOT WHAT THEY LOOK LIKE. MY CRIME IS THAT OF OUTSMARTING YOU. SOMETHING THAT YOU WILL NEVER FORGIVE ME FOR.

I AM A HACKER. AND THIS IS MY MANIFESTO. YOU MAY STOP THIS INDIVIDUAL. BUT YOU CAN'T STOP US ALL.

FROM "THE HACKER MANIFESTO"

8 JANUARY 1986

INTRODUCTION

Hacking can refer to radical computer programming. In political art it's called detournement ("the theft of aesthetic artifacts from their contexts and their diversion into contexts of one's own devise" - Greil Marcus); in music and video it's mashup, remix, fantasia or variations; in sound, circuit bending; in amateur radio and telephony, phreaking. Then there's gene hacking (Eduardo Kac's rabbits that glow in the dark) and culture hacking or bricolage ("the refunctioning, by societal 'outsiders,' of symbols associated with the dominant culture, as in the appropriation of corporate attire and Vogue model poses by poor, gay, and largely nonwhite drag queens" - Mark Dery).

For our purposes, a hacker is "an inventive type, someone creative and unconventional, a person who sees doors where others see walls or builds bridges that others thought were planks on which to walk into shark-filled seas. Hackers are alive with the spirit of Loki or Coyote or the Trickster, moving with stealth across boundaries, often spurning conventional ways of thinking and behaving. Hackers see deeply into the arbitrariness of structures, how form and content are assembled in subjective and often random ways and therefore how they can be defeated or subverted. They see atoms where others see a seeming solid, and they know that atoms are approximations of energies, abstractions, mathematical constructions. At the top level, they see the skull behind the grin, the unspoken or unacknowledged but shared assumptions of a fallible humanity." (From "Hacker Generations", by Richard Thieme.)

In this course we explore hacking and the modes of cultural meaning production that arise around it. We're looking for programmers, DJs, musicians, activists, artists, podcasters, and students. We'll supply readings, films, videos and other resources. You will add your own resources to the mix.

There are no written exams. Instead you will use the theories and tools you acquire during the semester to make

stuff about some aspect of hacking. What you make can be in any form. You will do this in stages, starting with simple projects and moving to more complex ones. We encourage your own interpretation and voice.

All our classwork has the goal of providing ideas and methods for these projects. You will start with simple projects and move to more complex ones, using humor, irony, uncommon approaches, and bizarre techniques. Projects may be in any form, such as film, video, sound, performance, computer animation, collage, sculpture, assemblage, or any other media or combinations of media, but they must incorporate the theoretical and methodological work of the semester. You will make a total of three projects: one freethrow (the Make-a-thon), one small project, and one larger final project.

The class is in studio and discussion format. This means that your active participation is a requirement of the course. During the semester I expect you to contribute your own ideas and arguments to the discussions, and to be willing to take the risks such contributions imply.

HOW THE SYLLABUS WORKS

This syllabus includes a list of study material to be addressed on certain dates, but actual material may change as circumstances require. During the semester other material may be added, or listed material deleted. ACTLab courses are student-driven, and you are invited to submit material for inclusion or suggest changes at any time.

TAKE RISKS! AMAZE US!

In ACTLab courses we assume a high level of motivation on your part and your willingness to self-start, set your own goals, think independently, collaborate with others, seek help when you need it, and take risks. Let's make it an interesting time!

READINGS AND RESOURCES

All class readings, unless otherwise noted, are available on the course webpage, <http://www.actlab.utexas.edu/efh.shtml>. Some of the resources are there for you to browse as you feel the urge. Also, remember your best resource is always your own curiosity. When you find something interesting, share it, either in-person or via the Death mailing list, efh@actlab.utexas.edu.

MAILING LIST

Outside of class time we keep in touch via the Death class mailing list. Use it to swap ideas, ask questions, get and give alerts of schedule changes, share weird URLs, and whatever else you can think of. Most of you have already been subscribed to the list, but we didn't have email addresses for a few. Be sure to give us your email address the first day of class.

COURSE REQUIREMENTS

THE FOLLOWING SIX THINGS ARE REQUIRED FOR YOU TO RECEIVE A GRADE:

1. Attendance at all classes.
2. Reading all assignments and coming to class prepared.
3. Participation in discussion.
4. Successful completion of three projects. See **presentation** below.
5. Successful completion of documentation. See **documentation** below.
6. Cleanup of the ACTLab following final presentations.
Leave it the way you found it —no better, no worse.

ATTENDANCE

We take attendance at each class, initially by calling your name and later, when we're familiar with everyone, without announcing that we're doing so. Failure to attend a class without an excuse will lower your grade. Specifically note that **on project days you must stay for the entire class time**. A project day is a lecture day, and

the guest lecturers are you and your classmates. Listen critically to what other people are saying and doing. Be respectful and attentive as you would be to a guest professor talking about his or her research. Besides being a courtesy to your classmates, your thoughts, critiques and suggestions on everyone's projects are part of your individual coursework and of the group process which is integral to the ACTLab philosophy. When it's your turn to present, you are the guest lecturer, and you are taking up your classmates' time. Make it a tight, interesting show.

WHAT I EXPECT YOU TO DO FOR A READING ASSIGNMENT

1. Do the reading!
2. When you come to something that intrigues or excites you, make a note about it.
3. When you come to something that puzzles you, make a note about it.
4. When you come to something that drives you up the wall, make a note about it.

WHAT I EXPECT FROM YOU DURING DISCUSSION

1. Ask or talk about the parts of the text that you made notes about.
2. Participate. Talk. Ask. Argue. Laugh. (Some of the readings are ludicrous.) None of this stuff is holy, none of the opinions are cast in concrete.
3. Bring in stuff—maybe text, maybe just stuff—that you feel relates to the reading. Throw it on the table, say why it's there, and see what happens.
4. My main job during discussion is to listen. My role is to make an opening or framing statement to start from. I'll guide when necessary, and clarify tough points. Discussion time gives me my best sense of how you're thinking about the theoretical part of our work together.

Participation is one of the keys to success in this class. You can't participate in discussion in a real way unless you've done the out-of-class prep.

PRESENTATION

No presentation may endanger the presenter's or others' health or safety.

You will be graded both on the projects and on the quality of their presentation in class. This includes items such as lighting, sound, and organization. An attachment containing requirements for ACTLab student presentations is included with this syllabus. Read it carefully and save it for future reference. It contains information which you will need in order to receive a grade.

DOCUMENTATION

You must provide complete documentation of your work in the form of a web site. A web site consists of a home page that says something about you, and additional pages for each project as necessary.

Documentation means a description of each project, how it was made, its relationship to the readings and discussions (i.e., its theoretical grounding), your thoughts about the project, etc., together with sound recordings, video, and/or still photos of the work in progress and the completed project.

You will make the web site in four stages. Each stage consists of documentation of one of the three projects, plus a fourth stage consisting of the homepage with your bio, external links, and whatever additional information you think is relevant. Stages one and two are due in class the week following project presentations one and two. Stages three and four are due no later than 5:00PM. Sunday, May 16.

GRADING

Participation in discussion	25%
Make-a-thon project	5%
Middle project	20%
Final project	25%
Documentation	25%
Total	100%

COURSE SCHEDULE

JAN 21 :	Course introduction; expectations and facilities.
JAN 26 LAB :	Clerical business and introduction to websites For next week: Read "The Hacker Manifesto"
JAN 28 :	What can be hacked? Theory and your project; setting and meeting goals; sample projects and websites;
JAN 30 LAB :	Images, video, and your website; introduction to copyright/intellectual property
FEB 4 :	Screening: <i>Ghost in the Shell</i> ; How to give an ACTLab presentation; how to critique an ACTLab project
FEB 9 LAB :	Preparation for Make-a-thon
FEB 11 :	Make-a-thon presentations!
FEB 16 LAB :	Continue presentations if necessary; website troubleshooting and in-class work time
FEB 18 :	Make-a-thon websites due by midnight. Show websites in class for critique and questions; video lab
FEB 23 LAB :	Soldering, speaking-building, and arduinos
FEB 25 :	Social and cultural hacking; hacktivism
MARCH 2 LAB :	Computer building and Python
MARCH 4 :	Identity hacking
MARCH 9 LAB :	Steampunk; guest speaker Donovan Gentry
MARCH 11 :	Middle project presentations!
MARCH 18 :	SPRING BREAK! NO CLASS!
MARCH 25 :	More middle project presentations!
APRIL 1 :	Middle project websites due by midnight. Show websites in class for critique and questions. Language hacking
APRIL 6 LAB :	Screening: <i>Good Copy, Bad Copy</i>

APRIL 8: Physics hacking
APRIL 13 LAB: Screening: *Hackers*

APRIL 15: Academic hacking and pedagogy
APRIL 20 LAB: Guest speaker Eric Beggs

APRIL 22: Pirate radio
APRIL 27 LAB: Building transmitters

APRIL 29: Final project in-class work and preparation
MAY 4 LAB: Final project in-class work and preparation

MAY 6: Final project in-class work and preparation

MAY 9: Final presentations!

MAY 16: Final websites due by 5:00PM Central Standard Time.

REQUIREMENTS FOR STUDENT WEB PAGES

These requirements are mandatory. You are responsible for knowing them and for carrying them out. Failure to do so will result in a failing grade. You will receive no further reminders.

We will provide whatever tutorials you may need to construct your web site until the date that first web pages are due, one week after Make-a-thon presentations. No further tutorials will be given after that date.

You may construct your web site by writing it from scratch; by using the WordPress system we provide; by adapting one of the many templates available free online, provided that we determine it doesn't raise security issues; or by using any of the following web construction software: Dreamweaver; Nvu; Amaya. Dreamweaver is a commercial product and is available on all ACTLab computers. Nvu and Amaya are free Open Source products and may be freely downloaded to your own laptop. **You may NOT use iWeb.**

The entire contents of your web site must be on the ACTLab server, nowhere else. No external links are permitted, except on the "Links" or "Further information" page if you make one. You may not link anything to your, or anyone else's, UT WebSpace. You may freely link to your own pages on the ACTLab site or to other pages on the ACTLab site.

Everything must work. No broken links, no missing images.

Compress videos with Quicktime Pro using the following default setting (Export: Movie to Quicktime Movie (or whichever format you originally made, i.e. AVI to Quicktime), Use: Broadband Medium). No Windows Media (wmv) files may be used on your site.

Compress images to jpg set to low quality (20). In Photoshop, use "Save for Web." In Gimp, use "Save image as," select "JPEG," click "preview" and visually choose a quality between 20 and 50. Save as gif only if you require the alpha channel (transparency). On average, a properly compressed jpg file should be no more than 10-20K in size.

Resize and save images and videos in the screen size you will display them. A 1024x768 image will still download as 1024x768 even if you tell the browser to display it as 250x120—a huge waste of bandwidth that can unacceptably slow your site’s loading time.

All videos and sound files must stream. This means video and sound files must be capable of starting to play immediately when the page loads, without having to download the entire file first. You may choose to have a file start to play automatically or not, but all video or sound files must be able to do so. Files compressed with Quicktime Pro at medium, high, or lan settings are automatically ready for streaming. If you use some other program to compress your videos, you may have to specifically enable streaming in that program’s settings. Regardless, you are responsible for making sure that your video and sound files stream.

All pages must have clear, visible navigation tools. This means buttons, menus or links to the main headings of your site and your home page, plus a link to the ACTLab home page.

Do NOT have your website open a link in a new browser window or resize the browser window unless it is absolutely required by the aesthetics of your website design.

To upload your files, use Cyberduck for Mac or WinSCP for PC or other programs that support secure file transfer (SCP or SFTP). The ACTLab server is secure; FTP will not work.

When you complete each phase of your website, **email the full url (<http://www.actlab.utexas.edu/~youraccountname>) to Joey, Dustin, Steph, and Sandy** on or before the due date.

Web sites submitted after midnight of the due date, or that are incomplete or do not work properly by that time, will be considered late. A late, incomplete, or broken web site on the Make-a-thon or middle project will reduce your final grade. Absent dire circumstances such as documented family emergencies, a late, incomplete, or broken web site on the final project will result in a failing grade.

REQUIREMENTS FOR PRESENTATIONS

LIGHTING

All live presentations that involve anything other than simply screening a video are required to be properly lit. It is your responsibility to plan the lighting. You will draw up a light plot and arrange for the appropriate lights to be gelled and aimed before presentation time. If your presentation requires total darkness, you or an associate will be responsible for producing it. In the ACTLab this includes arranging for all monitors to be turned off, the control room to be darkened or shielded, and the studio doors closed. Proper lighting of your presentation is part of your grade.

SOUND REINFORCEMENT

Creating a soundscape is not complete until you have decided on, acquired, and set up the playback system. If your presentation uses sound, it is your responsibility to assure that appropriate amplifiers, speakers, and wiring are set up at the site of your presentation, connected, and working properly. Don’t assume that anything works until you have personally verified that it does. Don’t assume that power is available; verify that it is. Proper sound reinforcement is part of your grade.

MICROPHONE

If your presentation requires a microphone of any kind—wireless, wired, contact, whatever—and you expect us to supply it, it is your responsibility to request it via email at least a week before presentation. Doing so is part of your grade.

VIDEO FILES

If you intend to screen a video, you are responsible for verifying that the video files for your presentation are uploaded to the presentation computer at the beginning of presentation day, and that they play on that computer. Discovering at the last minute that your video does not work on the ACTLab presentation computer will result in a reduction in your grade.

EQUIPMENT CHECKOUT

RTF production equipment and ACTLab equipment are not the same. Unavoidably, the procedures for checking them out are different.

Students who need **ACTLab equipment** for this class:

Contact the equipment checkout team during checkout hours. Checkout hours are posted during the first week of class. Check out ACTLab equipment from, and return it to, the Deathstar, the room directly across the hall from the ACTLab.

Students who need **RTF production** equipment for this class:

1. Plan ahead. 500 students use RTF Equipment Checkout. ACTLab classes are a little different in that equipment useage is an option, not a requirement. Contact RTF Equipment Checkout at least a few days in advance of your needs. Email checkout@uts.cc.utexas.edu or call 512-471-6565. RTF Equipment Checkout is open Monday through Friday 8AM-4PM.

2. When you get there ask to speak with Linda or Hector because the student employees will try to impose rules that don't apply to you.

3. When you talk to Linda or Hector, the first words out of your mouth should be, "I'm in an ACTLab class and I need equipment." That way we'll know not to charge you \$25.50 insurance. Well, we won't charge you insurance if you keep the dollar value of your checkout below the insurance deductible. We can help you with that. There's about five minutes of paperwork to fill out, and then maybe 5 minutes for us to reserve your equipment and get it for you. Try to avoid dropping by Thursdays and Fridays because we are very busy. The other students make appointments (you can make one if you like), so we have to help people who have appointments first.

THE FINE PRINT

This syllabus is V.1.0. It may be updated from time to time as necessary. Once the class has met, based on the skills, proclivities, and wishes of its members, we may, and probably will, modify the reading assignments and discussion topics. If we do, you will receive notice about the new readings and discussion topics far enough in advance that you will have no difficulty in keeping up with such changes.

THE UNIVERSITY OF TEXAS HONOR CODE

The core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the University is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.

SCHOLASTIC DISHONESTY

The University defines academic dishonesty as cheating, plagiarism, unauthorized collaboration, falsifying academic records, and any act designed to avoid participating honestly in the learning process. Scholastic dishonesty also includes, but is not limited to, providing false or misleading information to receive a postponement or an extension on a test, quiz, or other assignment, and submission of essentially the same written assignment for two courses without the prior permission of the instructor. By accepting this syllabus, you have agreed to these guidelines and must adhere to them. Scholastic dishonest damages both the student's learning experience and readiness for the future demands of a work-career. Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. For more information on scholastic dishonesty, please visit the Student Judicial services Web site at <http://deanofstudents.utexas.edu/sjs>

UNDERGRADUATE WRITING CENTER

The Undergraduate Writing Center, located in the FAC 211, phone 471-6222, <http://www.utexas.edu/cola/centers/uwc/> offers individualized assistance to students who want to improve their writing skills. There is no charge, and students may come in on a drop-in or appointment basis.

SERVICES FOR STUDENTS WITH DISABILITIES

The University of Texas at Austin provides upon request appropriate academic accommodations for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-6259, 471-4641 TTY.

RELIGIOUS HOLIDAYS

Religious holy days sometimes conflict with class and examination schedules. If you miss a work assignment or other project due to the observance of a religious holy day you will be given an opportunity to complete the work missed within a reasonable time after the absence. It is the policy of the University of Texas at Austin that you must notify each of your instructors at least fourteen days prior to the classes scheduled on dates you will be absent to observe a religious holy day.

UNIVERSITY ELECTRONIC MAIL NOTIFICATION POLICY

All students should become familiar with the University's official e-mail student notification policy. It is the student's responsibility to keep the University informed as to changes in his or her e-mail address. Students are expected to check e-mail on a frequent and regular basis in order to stay current with University-related communications, recognizing that certain communications may be time-critical. It is recommended that e-mail be checked daily, but at a minimum, twice per week. The complete text of this policy and instructions for updating your e-mail address are available at <http://www.utexas.edu/its/policies/emailnotify.html>. (Optional: In this course e-mail will be used as a means of communication with students. You will be responsible for checking your e-mail regularly for class work and announcements.)

USE OF BLACKBOARD

This course DOES NOT use Blackboard. Do not use Blackboard to check assignments for ACTLab courses and do not use Blackboard mailing lists to email students in this course, as ACTLab mailing lists include classes and individuals who are not referenced by the Blackboard system.

COPYRIGHT AND FAIR USE

You may find the need to use copyrighted material this semester: music, photographs, movie clips, or any other expression. For many of your uses, you need to find the copyright holder and negotiate a license. You own the copyright to the work you produce in this class. As a copyright holder yourself, you understand the importance of copyright ownership. It is your responsibility to secure music and archival footage licenses as well as artwork, location and personal releases. You will find release templates on the RTF website.

For some uses, however, neither you nor anyone else needs to license copyrighted material. This is because copyright law exists to encourage and support creativity. Copyright law recognizes that creativity doesn't arise in a vacuum. As creators, we all stand on the shoulders of giants. New works of art (such as films, books, poems, paintings) all make use of what has gone before. Thus, copyright law not only protects authors with a copyright that lets them decide who can use their works, but also offers exemptions from the author's control. For filmmakers, the most important exemption is the doctrine of fair use. You can rely on fair use, where appropriate, in the film and media projects you undertake for this course. If you are making a documentary film, consult the influential Documentary Filmmakers Statement of Best Practices in Fair Use http://www.centerforsocialmedia.org/files/pdf/fair_use_final.pdf which was created by a group of national filmmaker organizations, has been endorsed by the University Film and Video Association, and is now relied on by film festivals, insurers, cablecasters, distributors and public broadcasters. Fair use also applies in the fiction film environment, but not necessarily to the same extent or in the same way.

As always, the central question is whether the new use is "transformative"—i.e., whether it adds significant value by modifying or recontextualizing the original. For more understanding, including information on when you can use works for free:

http://www.centerforsocialmedia.org/files/pdf/free_use.pdf

Without even invoking fair use, why you (mostly) don't need to worry about trademarks:

http://www.centerforsocialmedia.org/files/pdf/free_use.pdf

What is in the public domain:

<http://www.centerforsocialmedia.org/rock/backgrounddocs/copyrightterm.pdf>

How fair use lawsuits have been settled:

http://www.centerforsocialmedia.org/videos/sets/fair_use_case_studies

How fair use has been employed successfully in documentary film:

http://www.centerforsocialmedia.org/videos/sets/fair_use_case_studies

For general information:

<http://centerforsocialmedia.org/fairuse>

A NOTE ON THE TEXT

The text of this syllabus is set in Univers Condensed, designed by Adrian Frutiger in 1954 and released three years later by Deberny & Peignot. The display text is set in Impact Label and Impact Label Reversed, both available from DaFont (www.dafont.com).