

INSTRUCTION MANUAL
for
HOLOGRAPHY STUDIO

The School of the Art Institute of Chicago

Ed Wesly
M-3 Visual Research Laboratory
Chicago, IL

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ROOM B013
112 SOUTH MICHIGAN BUILDING
THE SCHOOL OF THE ART INSTITUTE OF CHICAGO

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ED WESLY
M-3 VISUAL RESEARCH LABORATORY
CHICAGO, IL

ADMINISTRIVIA

Things You Need to Know to Get Along

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PREFACE TO THE FIRST EDITION

This booklet is a compilation of handouts given out through the semester of the Beginning and Intermediate/Advanced Holography Classes at the School of the Art Institute of Chicago. The **Handouts** come from a variety of sources, from my first holography teaching gig at Gallery 1134, to papers delivered at Optical Engineering Conferences, or at Fermilab Holography Group meetings, articles I wrote for holosphere, the Advocate of Holographic Art, Science and Technology, (and a few that others wrote) to a number of styles of handouts developed for these classes.

The primary purpose of this publication is to provide an Instruction Manual for the Holography Lab @ SAIC. Nocturnal holographers may have a source for solving problems, as step by step instructions for each of the holographic set ups mentioned in the syllabus are supplied. It was attempted to make instructions for each piece of equipment used in the lab but completeness will have to wait for a later edition. It is believed that the barebones of the curriculum is adequately covered in the present edition.

The book is not meant to be read necessarily in a linear manner, like a novel. It is meant more for nibbling at, like in those private moments, or on the CTA, etc.

That is not to say that there isn't any method in the madness. The **EQUIPMENT** and **SET UPS** sections introduce the topics in the order that they are presented. Equipment starts with the Laser, then fixturing devices like Magnetic Bases, Screws, Clamps, then Beam Directors like Mirrors, through Spatial Filters, and Object and Filmholders to make Single Beam Reflection Holograms. The Little Jokers and the Light Meter are brought out when Single Beam Transmission Master Holograms with Mirror are demonstrated.

Graduating to the Printer Room brings a discussion of the Lasers back there, the Mighty, Mighty, Air Compressor, and various ancillary devices for the recording of Holographic Stereograms. The Set Up Steps are sequenced in the order that they are shot in the class.

Most of the book is original material that you will not find elsewhere, as it is specific to our program. What does sort of violate copyright law are the graphics; none of these silly little scissors logos; this thing was very literally cut and pasted together out of pictures out of catalogs, foreign language texts, and out of business magazines.

Please enjoy the result of thousands of hours of labor,

BEGINNING HOLOGRAPHY CLASS SYLLABUS

WEEK	TOPIC
1	Introduction to the Class and Holography
2-5	Single Beam Reflection Holography, Theory and Practice
6-9	Single Beam Transmission Holography, Theory and Practice
7	Midterm Critique
10-13	One Step Rainbow Shadowgram, Theory and Practice
14	Final Critique

CRITIQUES

The **Midterm Critique** is purely a technical one; show all attempts, failed or perfect. The **Final Critique** encompasses not only the technical aspect, but the completion of a finished project that combines a hologram and frame or display that is show-ready and which shows a deliberate attempt at an aesthetic statement. Notebooks may also be examined.

GRADES

The grades for this class are **CREDIT** or **NO CREDIT**. You can assume that you will receive a **CREDIT** if you attempt all the holographic experiments over the course of the semester. You will not receive a **CREDIT** if:

- A. You miss more than three classes.
- B. You have only attempted one type of hologram.
- C. You do not show up for the **Final Critique**.

EXPENSES

You can expect to spend about \$100 on **Holographic Plates and Films** over the course of the semester. The **Holography Department** supplies the necessary chemistry. Other expenses would involve expendable materials like hot glue sticks and objects for the holograms and framing or display items, like quartz halogen bulbs.

INTERMEDIATE/ADVANCED HOLOGRAPHY CLASS SYLLABUS

WEEK	TOPIC
1	Introduction to the class
2	HOLOGRAPHIC STEREOGRAPHY, Shoot class portraits
3	Shoot Stereogram Master
4-6	Rainbow Transfer from Master, Achromatic Transfer from Master One-Step Rainbow Shadowgram on Printer Theory and Practice
7	Midterm Critique
8-10	Holographic Mastering, from Objects, Theory and Practice
11-13	Multi-color Rainbow Transfers, Theory and Practice
14	Final Critique

CRITIQUES

The **Midterm Critique** is purely a technical one; show all attempts, failed or perfect. This is to make sure that the process is mastered. The **Final Critique** encompasses not only the technical aspect, but the completion of a finished project that combines a hologram and frame or display that is show-ready and which shows a deliberate attempt at an aesthetic statement. Notebooks may also be examined.

GRADES

The grades for this class are either **Credit (CR)** or **No Credit (NCR)**. You can assume that you will receive a **Credit** if you attempt all the holographic experiments over the course of the semester. You will not receive **Credit** if:

- A. You miss more than three of the classes.
- B. You have only attempted one type of hologram.
- C. You do not show up for the **Final Critique**.

EXPENSES

You can expect to spend about \$200 on **Holographic Plates and Films** over the course of the semester. The **Holography Department** supplies the necessary chemistry. Other expenses would involve expendable materials like hot glue sticks and objects for the holograms and framing or display items, like quartz halogen bulbs.

LAB TIMES

A feature of this class is the opportunity to work on your own in the Holography Lab. A Lab Time Schedule Sheet will be posted on the Bulletin Board in Room B013 so that everyone will be able to work on a weekly basis.

NOTEBOOKS

It would be best to keep your class and lab notes in a book dedicated to holography. Page-numbered quadrille-ruled scientific-type sewn-binding laboratory notebooks are the best in case you are ever embroiled in litigation, but practically anything is fine for this class to record your class notes, lab experiences, and inspirations.

HOLOGRAPHY TEXTBOOKS

These books will prove helpful:

"The Holography Handbook", Fred Unterseher, et al, Ross Books, 1982.

"Practical Holography", Graham Saxby, Academic Press, 1988.

"Seeing the Light", Falk, Brill and Stork, Harper & Row, 1986. You will also receive tons of handouts.

FREE TEXTBOOKS

Although the following are not necessarily holographic texts, there is a wealth of information on Lasers and Optics available just for the asking for the current catalog from the outfits below.

MELLES GRIOT
1770 Kettering Road
Irvine, CA 92714
800-835-2626

JODON, INC.
62 Enterprise Drive
Ann Arbor, MI 48103
313-761-4044

NEWPORT CORPORATION
1791 Deere Avenue
Irvine, CA 92714
800-222-6440

MWK INDUSTRIES
1269 W. Pomona
Corona, CA 91720
800-356-7714

EDMUND SCIENTIFIC
101 East Gloucester Pike
Barrington, NJ 08007-1380
609-5736295

SPINDLER & HOYER
459 Fortune Boulevard
Milford, MA 01757-1745
800-334-5678

LAB TIME

Every **Holography Student** is entitled to eight hours a week of actual lab experience, with or without a partner. **Permanent Lab Times** will be assigned at the beginning of the semester, or if it fits the class, weekly sign ups instead. **Lab Time** is an eight hour slot, and may be an overnight. Shifts not assigned will be available on a first come, first served basis. You can make your time available if you know that you will be not using it. Time slots can be exchanged or bartered.

You will have full access to all the equipment and resources in the **Holography Labs**. (Except **Beginning Holography** students are limited to the smaller table. Just for one semester!) You also have the responsibility to keep the area clean and leave the set up in some semblance of working order for the next victim. Communicate with your successor!

You also have the duty to keep the area secure! It is an unpleasant fact but things like wallets, lunches, etc. have disappeared from B013. Keep the door locked while you are working, especially when you are in the **Advanced Lab** or the **Darkroom!**

Keep valuables in sight, or in the **Darkroom!**

ENTERING ROOM B013

Get the **KEY** from the **Guard's Desk**. All the paying customers will be on the list, and be sure that the name on your **ID CARD** matches that on the class roster. **Key Ring 818** has key **ABB 15** on it, which will unlock all doors in the **Holography Area**. If someone else is working down there, the key might have been checked out.

The **Hallway Door** can be unlocked and opened by turning the key to the right, and then it will stay unlocked. Turning it to the left will lock it. **IT IS IN YOUR BEST INTERESTS TO LEAVE THE DOOR LOCKED AT ALL TIMES!!!** It is a cold cruel fact of life in the big city that you can get pickpocketed on a crowded el but even here, in the quiet calm of an art school, that there is always the possibility that things may not be around where you left them when you return to them. **ALWAYS KEEP THE HALLWAY DOOR CLOSED AND LOCKED AT ALL TIMES! ALWAYS KEEP THE KEY IN YOUR POCKET TO AVOID THE EMBARRASSMENT OF GETTING LOCKED OUT!**

The door to the **Advanced Lab** works the same way as the **Hallway Door** with regards to locking and unlocking procedures. The **Darkroom Door** can be unlocked or locked with the key. Valuables could be left in here or in the **Back Lab**, and even though the

same **KEY** opens all these doors, they seem to afford a greater cocoon of security when there are more doors to go through.

At the end of your lab time, please always remember to **LOCK ALL DOORS** and to return the key to the Guards' Desk. Failure to do so will result in their displeasure, some phone calls, possible fines, and great distress for the next student who wants to check out the **KEY**, as there really is only one. Also it is not considered proper to give the key to the next person to return for you; the guards like to see you turn it in yourself and the next one check it out. (Guard's Desk Phone Number: 312-345-3528)

METHODOLOGY FOR WORKING IN THE HOLOGRAPHY LAB

Lab Time does not have to be all that threatening. By being prepared, higher productivity can be achieved with less effort and waste.

1. Prepare the object(s). It would be best to have the objects mounted on stands before you get into the lab, as time is wasted while hot glue cools and paint dries.
2. Position the objects in the set up. Hopefully not too much will have to be changed, but always be prepared for the worst.
3. Lay out the chemistry you will be using. If there is a problem, look for an assistant or phone them.
4. Check the final alignment and composition before putting a plate in the set up.
5. Load the holographic plate and wait a couple of minutes before exposing so that vibrations, wind currents, and heat has a chance to settle out.
6. Expose and develop the plate.
7. Evaluate the hologram. Does exposure need to be changed? Does the object come out the way you want it to? Make the necessary changes and continue.
8. Clean up your mess and return the key. The secret monitor may be watching you!

NO SMOKING IN THE LAB OR DARKROOM!!!

Keys

SAIC students and student employees may have access to sign-out keys on a daily basis or may have take-home keys issued to them according to their department head's written instructions. Sign-out keys are signed out each day from the Security Desk in your building and must be returned to the Security Desk before leaving the building each day. Take-home keys are issued to you for as long as you occupy your current position if you are an employee or until you no longer have access to your studio if you are a student. Upon termination, transfer to a different position, promotion or at the end of the semester you must return your take-home keys to the Security Department. Failure to return Security-issued keys to the Security Department will result in a replacement fine for each unreturned key and/or placement of a hold on your records.

Overnight Access

Overnight access to work in the Columbus, Champlain and 112 Michigan Buildings is available to students once your department head provides written authorization (with his or her signature) to the Security Desk in your building. Both graduate and undergraduate students should have written authorization. All students must have ID cards that have been validated for the current semester. Overnight access is good for those areas indicated on the written authorization only. Those students without a written authorization on file should exit the building before closing (12:00am).

With the exception of the 112 Michigan Building overnight access is not available during winter and summer terms, or over holidays, when the buildings are closed. Overnight access is available during the Fall and Spring semesters only for all other School facilities.

Those persons wanting to work past closing should be in the building and sign the overnight access register at the Security Desk (with your ID card) before 12:00am. No one, including those with overnight access authorization, will be permitted to enter the building after 12:00am.

As a rule, students authorized for overnight access are not permitted to have non-student visitors with them after closing. Those wishing to have non-student visitors after closing should obtain written authorization signed by their department head which includes details concerning the access for the student and their non-student visitor. This written authorization should also be signed by the Dean (or the Associate Dean, Graduate Division Chair, Undergraduate Division Chair or Director of Student Affairs in her absence) and the Associate Director or Assistant Director of School Security. Students may leave at any time after closing by signing out at the Security Desk but may not re-enter the buildings until they re-open at 7:00 am during the fall and spring. The buildings open at 8:00am during the summer and winter.

Students are advised that it may be dangerous to leave the building late at night and are reminded that the School cannot be responsible for students' safety once they leave the building. Resident students who are returning to the New Residences late at night may request a security escort at the Security Desk of the building they are leaving.

Smoking

Smoking in classrooms and studio spaces is against city fire code and is strictly prohibited. Smoking is permitted in the smoking lounges and designated smoking areas. Violation of this rule should be reported to the Security Desk of the building in which the violation occurs immediately. Fines may be levied and other forms of disciplinary action may be taken.

THE SCHOOL OF THE ART INSTITUTE OF CHICAGO

DEPARTMENT OF PROTECTION SERVICES