

Safety rules and regulations in CINTRA

1. General

THE NORMAL WORKING OFFICE HOURS IN CINTRA (office and experimental & characterization rooms) ARE FROM 8:30 A.M. TO 5.30 P.M. FROM MONDAY TO THURSDAY, FROM 8:30 A.M. TO 5.15 P.M. ON FRIDAY. DURING WEEKDAYS, AFTER NORMAL OFFICE HOURS, WORKING IN THE OFFICE IS ALLOWED UNTIL 11.00 P.M AND FROM 8.30 A.M. TO 1 P.M ON SATURDAY,



HOWEVER, WORKING IN THE EXPERIMENTAL AND CHARACTERIZATION ROOMS (laser, optical fiber, FCVA and RF areas) AFTER NORMAL OFFICE HOURS, UNTIL 11.00 P.M AND FROM 8.30 A.M. TO 1 P.M ON SATURDAY IS AUTHORIZED ONLY IF A PERSON IN CHARGE (PIC) IS PRESENT:

- Optical fibers area: Dr Wu Zhifang
- Lasers area: Dr Shuwen Zeng or Dr Danang Birowosuto
- FCVA area: Dr Tan Chong Wei or Mr Etienne Rodriguez
- RF room: Dr ZhiHong Liu

Otherwise, permission must be granted from the Security Office to stay after the stipulated time. Failure to adhere to the above stated rule may result in alerting the Security Office. In this case, a security violation would be filed. Disciplinary action may be taken against the personnel involved. All activities at CINTRA are recorder by a **24 HRS CCTV SURVEILLANCE.**



ENSURE THAT ALL THE ENTRANCES ARE PROPERLY CLOSED. Objects should not be used to prevent or obstruct the closure of the main door. Failure to close the door will result in alerting the Security Office.

**KEEP DOOR
CLOSED**

DO NOT BRING IN ANY UNAUTHORIZED PERSONS IN CINTRA WITHOUT PRIOR PERMISSION FROM SUPERVISORS. ONLY CINTRA AUTHORIZED USERS AND MEMBERS WITH SECURITY ACCESS CARDS ARE ALLOWED TO ACCESS CINTRA DURING AND AFTER NORMAL WORKING OFFICE HOURS. You must tap your own matric card to gain access to the labs during this period. FYP students and non-CINTRA users are not allowed to access the labs after office hours. For equipment installation, the user responsible for the new equipment must accompany all vendors until they leave the laboratory.



Please **KEEP THE WORKING AREAS CLEAN** and wear proper attire (do not wear slippers or sandals in the lab). All users are required to put on trousers or long



pants in research and teaching wet laboratories. Always wear closed toed shoes in the laboratory.

DO NOT EAT AT YOUR DESK and do not throw leftover food in CINTRA food garbage bins, as this will cause encourage infestations of rats in the laboratories. **PLEASE GO TO DEDICATED AREAS (COFFEE ROOM) TO EAT.**

Do not work when you are feeling extremely sick as to not infect others.

REPORT ANY FAULTY EQUIPMENT to the secretary (Jing Fei, Tiffany) or person-in-charge (PIC) immediately. Never meddle with someone else's setup. If you need to borrow any component/equipment from others, you will need to ask the user before taking any item from the experimental setup.

Log-in and Log-out each time you use a piece of equipment. A log file is provided for each equipment. Equipment Authorization Form is required to be completed by applicants and necessary approvals are required before a staff or student is allowed to be trained to use the equipment.

EVACUATE WHEN THERE IS AN ALARM. The evacuation and meeting point plans are pinned in different places in CINTRA.



2. Safety

a. General safety

The members of CINTRA has to follow different courses and complete different risk assessment prior to do experiments:

- I. View a **SAFETY VIDEO** to be sensitive to safety in general
- II. **TRAINING MATRIX** for members of CINTRA
- III. **RISK ASSESSMENT** related to the CINTRA member project

Safety video to be viewed prior to attend a safety briefing in CINTRA

Please view the safety video on the following link:

<http://www.eee.ntu.edu.sg/aboutus/Services/Pages/Home.aspx> → EEE Safety



Training matrix for members of CINTRA

The attendance for the following courses are **COMPULSORY FOR ALL STAFF, UNDERGRADUATE AND POSTGRADUATE STUDENTS:**

1. EEE Safety Induction for Lab Users
2. NTU Safety Induction for Laboratory Users

Please login in NTU learn

(<https://ntulearn.ntu.edu.sg/images/ci/NTUlearn/index.html>) and go to Course and then, Safety Training Topic

Online courses:

It usually consists on watching videos or read slides on the topic and taking a quiz afterwards. This quiz can be taken an unlimited amount of times until a passing grade awards you with the completion of the particular topic.

Compulsory for all staff and postgraduate student

1. OHS2ELS01 - Electrical Safety (by e-learning)
2. OHS2FIS01 - Fire Safety in NTU (by e-learning)
3. OHS2STF01 - Slip, Trip and Fall (by e-learning)
4. OHS2WOE01 - Workstation Office Ergonomics (by e-learning)
5. OHS2MAH01 - Manual Lifting (by e-learning)
6. OHS2SIG01 - Understanding Signage from SS508 (by e-learning)
7. OHS2FEB01 - Use of Fire Extinguisher Basic (by e-learning)



Compulsory for users in Laser Room for laser users

1. OHS2NRR01 - Non-ionizing Radiation Introduction to NIR and Local Regulation (By e-learning)
2. OHS2NRL01 - Non-ionizing Radiation Laser Safety Training (by e-learning)



Compulsory for users dealing with chemicals

1. OHS2HDC01 - Basic Guide for Handling Chemicals (by e-learning)
2. OHS2GHS02 - Understanding GHS (by e-learning)
3. OHS2FUC01 - Fume Cupboard (by e-learning)
4. OHS2DDR01 - Donning A Disposable Respirator (by e-learning)
5. OHS2HMR01 - Fitting A Half Mask Respirator (by e-learning)
6. OHS2SDS01 - Understanding SDS (by e-learning)
7. OHS2UFB01 - Use of Fire Blanket (by e-learning)



After the completion of the courses as stipulated in the training matrix, please follow the attached link to **PRINT OUT** (pdf) the summary of courses attended and email to Jing Fei, Tiffany jingfei@ntu.edu.sg for approval to commence work in CINTRA. Please login on NTU website <http://www.ntu.edu.sg/> and go to:

For Students:

GSLink – General Services – Safety Training – My training records

For Staff:

Stafflink – Learning & Development Services – Safety Training Management System – View – My Training Records

Risk Assessment (Compulsory for each process or project)

It is a process required by Workplace Safety & Health Act to:

- Identify and analyze safety & health hazards associated with work
- Assess the risks involved
- Prioritize safety procedures to control the hazards and reduce the risk

To prepare RA online, go to WRAS link

(<http://www.ntu.edu.sg/ohs/Pages/default.aspx>)

To have an overview on how to write a RA, take the following online course:

OHS2RMD01 - Risk Management Doing Risk Assessment (by e-learning)

You can ask you office mates to help you fill and get RA examples.



b. Laser safety

Do not enter the room when “**LASER IN OPERATION**” sign is on. There are many high power lasers and lasers in the invisible spectrum in the lab.

EACH LASER HAS A N2 LICENSE DELIVERED BY THE NATIONAL ENVIRONMENT AGENCY (NEA) AS SAME AS THE USER HAS TO OBTAIN A N3 LICENSE FROM THE NEA IN ORDER TO USE THE LASERS. You cannot use a non registered laser in CINTRA. You need to ask for license via the NEA. It consists on medical examination (eyesight) and exam in order to use. Please approach PIC or Students who already passed to get more information. When you get the N2 license for laser or N3 license as a user, please print out and give to the secretary for record.

Never look directly into the laser beam path (some light might also be in the invisible range such as UV or IR).

DO NOT WEAR JEWELRY OR WATCH DURING YOUR EXPERIMENT, as the scattered light may damage your eye.

You must get your eyes examined for working with Class 3b & 4 lasers, authorized and be trained before you are allowed to use the laser.

Wear protective eyewear when using a laser.



WEAR YOUR SAFETY GLASSES

c. Chemical handling

THE USE OF ACIDS AND BASE IS NOT ALLOWED IN CINTRA. Only solvents such as acetone, isopropanol are authorized.

d. Ultrasonic bath

EACH ULTRASONIC BATH HAS N2 LICENSE DELIVERED BY THE NEA. You cannot use a non registered ultrasonic bath in CINTRA. You need to ask for license via the



NEA. When you get the N2 license for the bath, please print out and give to the secretary for record.

e. Equipment training request

We do not have on-line system as EEE as same as the FOM (on-line booking system). Please see the following staff if you want to be trained on an equipment:

- Optical fibers set-up: Dr Wu Zhifang
- Photoluminescence set-up: Dr Danang Birowosuto or Mr Umar Saleem
- Femto-Laser set-up: Mr Ange Maurice
- RF characterization: Dr ZhiHong Liu



3. Loan of equipment from the laboratory

DO NOT MOVE ANY EQUIPMENT IN AND/OR OUT OF THE LAB WITHOUT INFORMING AND PERMISSION THE PIC AND THE SECRETARY.

EVERY EQUIPMENT MOVED IN CINTRA for a certain period has to be registered in CINTRA via our log documents and NEA documents for lasers and ultrasonic bath (N2 license).

Consumable item may be loaned out through the technician, from 9.00 a.m. to 11.00 a.m. daily except Sunday.

4. Purchase of item

Purchase requisition form is available with the secretary. Fill up the Purchase Requisition form and pass it to the secretary. On the form, approval is required from your Project supervisor, Lab supervisor and Head of Division.

Fill in the item required to purchase on the item descriptions, your Final year Project number on the remark's column and pass it to the secretary.

Prior to purchasing some items and claiming for petty cash, please ask your supervisor for authorization. If he agrees, let your supervisor sign on the purchased item's receipt and attached it with the petty cash claim form. Please go to the following link on NTU website <http://www.ntu.edu.sg/> and go to:

For Staff:

Stafflink – Financial Services - Integrated Claims System – New Claim

You can ask the secretary to help you for filling the form.



5. Emergency contacts

Emergency:

- Police: Call 999 (Emergency only)
- Nanyang Neighborhood Police Centre: 6792-999
- NTU Campus Security and Emergency: 6790-5200 (24-H)
- Fire or emergency ambulance: Call 995
- Non-emergency ambulance: Call 1777

Fault Reporting Centre:

For breakdown of all electrical, water and security services, please call NTU Reporting Service:

- NTU phone: 4777
- Your mobile phone: 6790 4777

Emergency Evacuation:

For Emergency Evacuation of the laboratory, please follow PIC in charge:

- Ms Jing Fei, secretary of CINTRA
- Professor Phillipe Coquet, director of CINTRA

I agree and understand all the following safety rules and regulations

- ✓ General Rules
- ✓ Safety Rules & Regulation for handling chemicals, ultrasonic bath and Laser
- ✓ Training Matrix
- ✓ Requirement of Risk Assessment
- ✓ Emergency Exit escape procedure
- ✓ Good Housekeeping Practice
- ✓ Personal Responsibility

(Please see the next page for details)

I have viewed the Safety Video

Name of User : _____

Staff / Student Card No : _____

Designation : _____

Handphone : _____

Signature : _____

Name of Project Supervisor : _____

Briefed by : Jing Fei

Date : _____