

Newmark Structural Engineering Laboratory

Basic Policy and Rental Fee Structure

1. Basic policy and regulations

The Newmark Structural Engineering Laboratory is under the umbrella of Department of Civil and Environmental Engineering with the goal of providing a state of the art mechanical testing facility to all faculties at the University of Illinois. The intent of this section is to define the policy and regulations and insure a level playing field for all researchers, while not placing a fiscal burden on the Department of Civil and Environmental Engineering only. The following items also protect the scientific integrity of ongoing experiments and safety of all individuals in the laboratory.

1. The overall objective of the laboratory has been and will continue to be to maintain a state of the art mechanical testing laboratory. Within the broad focus of materials testing, NSEL will focus on the higher than 100 kN (20 kip) load ranges. Any material testing program which requires loads between 500 N to 100 kN is recommended to be carried out in AMTEL which is the state of the art facility in the Department of Mechanical Engineering. A concerted effort has been directed toward cooperation with this facility, in order to avoid duplication of services. Primarily, the NSEL will concentrate on the large-scale structural testing. However, a testing frame with capacity of 3 mln pounds is also available in the Department of Theoretical and Applied Mechanics for both materials and structural testing.
2. The use of all NSEL equipment will be scheduled by the NSEL coordinator. Just because a piece of equipment does not appear to be in use does not entitle someone to assume it is available. It may require maintenance and pose a safety hazard, or it may be set up for another researcher. Due to workmen's compensation and other insurance issues primarily the University of Illinois personnel are allowed to operate the equipment. Graduate students will be allowed to operate the equipment after the appropriate training in both operation and safety is completed. Graduate students and any other potential users must get the authorization from the NSEL coordinator. Special precautions should be exercised for visitors and observers (such as mandatory safety glasses and hard hats). The location of testing setups for structural testing will be determined also by the coordinator. In the case of any problems with scheduling, the laboratory director will intervene.

3. Disturbing another researchers experiment is cause for revocation of privileges. There are some common tools and equipment that should be returned to their proper location. Just because an item does not appear to be in use does not qualify as an invitation to remove or borrow it. Ask the NSEL personnel when in doubt.
4. The NSEL coordinator is responsible for scheduling of testing activity in the laboratory. If the scheduling conflict arises, priority will be given in the following order: 1) Research contracts, 2) Commercial testing contracts, 3) Other universities and government agencies.
5. Student Instrumentation Work Shop equipped with power tools should be available primarily for graduate students working in the NSEL. The main objective of the student's shop is to provide an opportunity to graduate students to build instrumentation fixture; e.g. lvdh holders, carry out simple machining operations; e.g. drilling, cutting, grinding, etc. Full/part time instructor should be designated to run the student's machine shop. His responsibility would be to maintain all power tools operational, take care of other tools and materials in the shop, provide a necessary training to graduate students on how to use the shop equipment and safety issues. The designated person will report to the NSEL coordinator.
6. The Machine Shop of C&EE should operate on its own policy and regulations. Some employees of the shop, however, should be designated to support ongoing testing projects, which require a usage of heavy equipment; e.g. crane, forklift, etc. Those people, should be supervised by either Principal Investigator of the project or the NSEL coordinator.
7. New testing arrangements, in particularly structural testing, must be consulted with the NSEL coordinator. In the conflicting situations, the NSEL director should be involved to make the final decision. The NSEL has experienced, over the years, great deal of testing programs during which fundamental modifications of testing systems were required due to a poor design. The principle is very simple: the more time spent at the drawing board, the less painful testing is.
8. All new proposals which consider an usage of the NSEL testing facilities should be discussed with the NSEL coordinator as far cost and availability are concerned.

2. Rental Structures

Fees will be assessed on a daily or monthly basis as follows (Table 1). An account number should be provided before testing begins. Due to the indirect cost difference between research and commercial contracts, two types of fees have been used in the NSEL:

Research testing. The basic intent of the research fee structure is to cover maintenance costs, but not discourage more formidable experiments. If the NSEL personnel are involved in the setup and testing activities associated with the research programs, the hourly rates will apply according to the individual hourly rate. Some research is of a longer duration, and the monthly rates reflect in part the assumption that less NSEL personnel time is required to assist these individuals. That is why the monthly rate assumes 60% of a dollar value obtained from multiplication of daily rate times 30. The training fee (\$35/h) instituted reflects a similar policy at the AMTEL testing facility. No attempt is made to break the user fees into smaller denominations than daily, since certain costs such as scheduling and setup remain fixed. Research rates will be charged to the research contracts of the University of Illinois.

Table 1. User fees for testing equipment at the Structural Engineering Research Laboratory.

Equipments	Commercial Testing			Research Testing	
	Daily	Monthly	Idle	Daily	Monthly
20 kips	\$200	\$3,600	\$20	\$40	\$750
50 kips	\$250	\$4,500	\$25	\$50	\$900
100 kips	\$350	\$6,300	\$30	\$75	\$1,400
600 kips	\$525	\$9,500	\$55	\$100	\$1,800
100 kips b-axial	\$500	\$9,000	\$50	\$100	\$1,800
300 kips RIEHLE	\$400	\$7,200	\$40	\$80	\$1,440
Shake Table	\$500	\$9,000	\$50	\$100	\$1,800
Floor, 1 actuator	\$350	\$6,300	\$35	\$75	\$1,400
Floor, 2 actuators	\$500	\$9,000	\$50	\$100	\$1,800
Floor, addl. act	\$100	\$1,800	\$10	\$25	\$450
HPS (pump)	\$120	\$2,160	\$10	\$25	\$450

Remarks:

1. The minimum time of rental for commercial testing is 2 h.
2. The minimum time of rental for research testing is 24 h.
3. Instrumentation will be charged separately unless it is a part of testing set-up involving hydraulic actuator:
 \$25/day or \$450/month -- commercial testing with a minimum time of 2 h.
 \$5/day or \$90/month -- research testing with a minimum time of 24 h.

Commercial testing. The basic intent of commercial testing fee structure is to cover both maintenance and amortization costs associated with pieces of equipment used for testing. The person conducting commercial tests is responsible for any unpaid charges. Other universities and government agencies will also be charged the commercial testing rate (plus operator hourly

rate if required for insurance purposes). Commercial rates will be charged to the commercial testing contracts of the University of Illinois.

Table 2. User fees for accessories at the Structural Engineering Research Laboratory.

Equipment	Commercial testing			Research testing	
	(\$/day)	(\$/month)	Idle time, \$/day	(\$/day)	(\$/month)
MM 2100, 4-ch	25	450	5	5	90
Macro-sens, 8-ch	25	450	5	5	90
DC power supply	15	270	5	5	90
HP DAQ	25	450	5	5	90
Computer DAQ	25	450	5	5	90
Transducers	10	180	5	5	90

Testing accessories such as: extensometers, load cells, x-y recorders, computer data acquisition systems, power supplies, signal conditioners, transducers, etc. are available for the NSEL researchers. If these accessories are used as an instrumentation associated with the testing setup, no usage fee applies. If, however, any piece of accessories is used on the individual bases, daily and monthly rates will apply. The replacement cost at the reasonable amortization period (50% utilization over 5 years) are utilized to calculate these rental rates. The borrower is responsible for the cost of replacement or repair should the item be damaged. An account number and the Equipment Loan Form must be completed before any equipment is removed from the NSEL Instrumentation Shop. The loan period is assumed to be from the time the item is picked up until its return. Unauthorized borrowing will result in a doubling of the loan fee and a search surcharge (hourly rate needed to discover where the item is).

Machine Shop standard labor rate: \$50/hour