PREVENTIVE MAINTENANCE

All the microscopes in the Department of Laboratory Medicine are on a six month maintenance schedule provided by Micro Tech Optical of Bloomfield, Connecticut. The preventative maintenance schedule is indicated on each scope. Representatives from the company contact the Laboratory Manager of each section when service needs to be scheduled to identify a specific date and time. When the work is completed a copy of the invoices are sent to Purchasing for a PO. Purchasing then calls the PO into the company.

All microscope preventative maintenance and/or repair records can be found in the equipment repair book in each laboratory section. Microscopes are located in the following laboratory sections: Blood Bank, Hematology, Immunology, Microbiology, Virology, and also the satellite labs; Shoreline, Smilow and North Haven.

REPAIRS

If Microscope repairs are required at any time, call Micro Tech Optical at 860-243-0280 and request the repair. When the work is completed a copy of the invoices are sent to Purchasing for a PO. Purchasing then calls the PO into the company.

ROUTINE CARE AND MAINTENANCE

Keep the microscope in one permanent place at the work area, and make certain it is situated well away from the table's edge. Frequent moving of the instrument is not recommended. If it must be moved, grasp the arm firmly with one hand and support the base with the other.
Cleanliness of all optical components of the microscope is important for good optical performance. Therefore, when not in use, the microscope should always be

covered with the plastic cover provided. If any optical surface becomes badly coated with dust or dirt, all such loose dust or dirt should be blown off with a syringe or a camel's hair air brush before attempting to wipe the surface clean, so as to prevent scratching the lens. After removing loose particles, clean the lens with lens paper or lint-free cloth, not a paper towel.

Oil accumulation or fingerprints on the surface of the objective lens will impair its performance. Whenever lack of contrast, cloudiness, or poor definition is encountered, carefully clean the lens with lens paper or lint-free cloth, using a small amount of lens cleaner to solubilize the oil or grease, if necessary. Since the surface of the high-dry objective has a small central concavity, it may require cleaning with a moistened cotton-tipped applicator stick. Wipe the lens lightly without applying any undue force or scrubbing action. Do not use excessive lens cleaner.

For examination of slides with the oil-immersion objective use only Type A immersion oil (which can be obtained from any scientific product supply company). Mineral oil or any other oil of low viscosity should never be used, since it will seep into the lens casing and subsequently distort the optical clarity. When you have finished observing a slide with immersion oil, rotate the lens out of the oil and towards the low power objective. **Never** move the nosepiece so that the high power objective (40X) goes into the oil.

When using immersion oil, always strive to make sure that your microscope objective and substage condenser front lenses are kept clean and free of immersion oil. Use a Q-tip or lens paper or lint-free cloth to gently wipe excess oil from the lenses and microscope slide after experiments are finished. After the oil is removed, use a suitable lens cleaner to remove traces of immersion oil from the lenses. Failure to clean lenses properly may result in small crystallites forming on the coated surfaces when immersion oils either dry or collect dust and other contaminating particles from the atmosphere.

When halogen lamp replacement is necessary, turn the light transformer to the "off" position. Grasp the microscope arm firmly. Remove the light source following the manufacturer’s instructions. Wearing gloves, carefully pull the bulb out of the base. Insert the new bulb into the base by pressing the two prongs into the base holes. When the bulb is securely in place, push the light source back into place in the microscope base.

If any repairs are required refer to the repair section above.

DAILY CLEANING AND MAINTENANCE

COMPOUND LIGHT MICROSCOPE

Daily Maintenance

1. Clean objectives, eye pieces and stage with lens paper wetting it with lens cleaning solution.
2. Use lens paper to clean optical parts of the microscope.
3. Shut off the scope when not in use.
4. Cover the microscope when not in use.
5. These scopes are on a six month preventive maintenance schedule. Records of maintenance can be found in the equipment repair book.

FLUORESCENT MICROSCOPE

Daily Maintenance:

1. Clean objectives, eye-pieces and stage with lens paper wetted with lens cleaning solution. Also clean the entire stage to keep it grease free.
2. Use lens paper to clean optical parts of the microscope.
3. Lamp should be on a minimum of one hour before shutting it off.
4. Keep the area free of dirt.
5. Shut off the scope when not in used for one hour or longer.
6. Cover the microscope when not in use or before leaving for the day.

Monthly Maintenance:

1. Using Q-tips soaked with methanol clean the objectives, eyepiece and condensor.
2. Clean the entire microscope with wet cloth and wipe it dry.
3. Check the stage assembly from easy movement and clean the surface with lens cleaning solution.
4. Check the hours on the lamptime reset the mercury lamp is replaced after 500 hours. The power supply unit monitors the hours used. Notify supervisor if it is approaching 500 hours so the bulb can be replaced.
5. If you have a problem with light assembly, or stage movement or focusing, please notify supervisor immediately.

6. These scopes are on a six month preventive maintenance schedule. Records of maintenance can be found in the equipment repair book.

REFERENCE

http://micro.magnet.fsu.edu/primer/anatomy/cleaning.html

http://www.med.unc.edu/microscopy/resources/courses/pathology-464-light-microscopy/class-notes-for-pathology-464-light-microscopy

http://microscopy.zeiss.com/microscopy/en_de/home.html