



جامعة فهد بن سلطان
FAHAD BIN SULTAN UNIVERSITY

College of Engineering

Renewable Energy Engineering Department

Renewable Energy Engineering LABs

Policy and Safety Rules



Laboratory Policy

- Students must attend the lab section they have registered for.
- Labs start on time. Latecomers will not be allowed in the room once the experiment has started.
- To get credit for a lab you must complete and turn in a lab report on time. If you attend a lab session but fail to hand in a report on time you will receive a grade of zero for that lab.
- Lab reports will be checked for plagiarism (copied work) by Safe Assign, a program detects any similarities between your report and entries from a database of books, articles, websites, & other lab reports.
- Labs can be made up only within one week of your scheduled lab session, and only if there is a valid, documented reason for missing your lab. Permission for makeup labs must be obtained in advance from your lab instructor.

Safety Rules

1. Avoid bulky, loose or trailing clothes. Avoid long loose hair. Remove metal bracelets, rings or watchstraps when working in the laboratories.
2. Smoking, food, beverages and other substances are strictly prohibited in the laboratory at all times, and avoid working with wet hands and clothing.
3. You may enter the laboratory only when authorized to do so and only during authorized hours of operation.
4. Do not open, remove the cover, or attempt to repair any broken equipment or defective parts.
5. When the lab exercise is over, all instruments must be turned off.
6. Before equipment is energized ensure:
 - a. Circuit connections and layout have been checked by a Teaching Assistant.
 - b. All colleagues in your group give their assent.
 - c. Make sure the power is off when wiring or making changes to circuit.
 - d. Make sure components used are of a rating that will withstand applied current and voltage.
7. It is the duty of all concerned (who use electronics laboratory and visitors) to take all reasonable steps to safeguard the HEALTH and SAFETY of themselves.
8. Before leaving the lab
 - Place the chairs properly.
 - Turn off the system properly.
 - Turn off the monitor.
 - Please check the laboratory notice board regularly for updates.





Safety Guidelines

To develop a healthy respect for electricity, it is important to understand how it acts, how it can be directed, what hazards it presents, and how these hazards can be minimized through safe laboratory procedures.

How Shock Occurs?

Electricity can travel only in a closed or looped circuit. Normally, travel is through a conductor. Shock occurs when the body becomes a part of the electric circuit. The

It is possible to receive a shock by touching only the energized wire, or an energized metallic part, and the ground because of the nature of an electric circuit. An electric circuit constitutes a completely continuous path. It starts at the generator, flows through wires (conductors) to the transformer, and back to the generator. In the transformer, the voltage is reduced (or increased) and flows into the building, where it is used to do useful work, and then back to the transformer. The generator and the transformer both have direct connections to the ground, and the current will use these paths if its normal path of return is broken and if it can get to the ground.

To receive a shock, a person must become part of an actual circuit; that is, the current must flow through his body as it would through a conductor. Under certain conditions, a person may be exposed to electricity but, unless his body becomes part of a circuit, no harm results. If, for instance, a person is standing on an insulating mat and touches only one wire of a 120-volt circuit, no complete circuit is established and he will feel no shock. If, however, a person should touch both conductors of a circuit, even with the same finger, the finger becomes part of the circuit, current flowing through the finger from one side of the circuit to the other. For this reason, shock occurs when a finger is placed in a lamp socket (It is difficult to touch the base of the socket without also touching the side.)

To what extent a shock might be severe?

The severity of the shock received when a person becomes a part of an electrical circuit is affected by three primary factors. These factors are: (1) the rate of flow of current through the body, measured in amperes; (2) the path of the current through the body, and (3) the length of time the body is in the circuit. Other factors which may affect the degree of shock are: the frequency of the current phase of the heart cycle when shock occurs, and the physical and psychological condition of the person. A shock, even a small one, is more harmful if it passes through the heart. Electrical leads should be handled with one hand only, while the other is safely out of the way.

1. Under certain conditions, electricity can produce a painful burn.
2. A sudden, unexpected shock causes a fast reaction and the reaction can result in injury, either to the person getting shocked, or a bystander. Be especially cautious when the circuit contains coils and capacitors. These can cause shocks after power has been turned off.





To what extent a shock might be severe?

It is a good idea in any lab where electricity is used to learn where the master key is and how to switch it off in case of emergency. All students should be aware of elementary first aid and what to do if an accident occurs either to themselves or to any other students.

