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**FACULTY OF ELECTRICAL ENGINEERING
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**MEDICAL ELECTRONIC LABORATORY
PROBLEM PACK**

DEVELOPMENT OF EOG ACQUISITION CIRCUIT

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Project Introduction:

The objective of this experiment is for students to design an EOG signal acquisition circuit based on the block diagram provided in Figure 1 of the Student's Pack. From this experiment, students will acquire the following skills:

1. Learn four unique characteristics of EOG signals for upward, downward, right and left eye movement potentials.
2. Able to classify the EOG signals of unknown eye movements correctly.
3. Learn how to use EEG Data Acquisition System which comprise of electrodes with conductive media, amplifiers with filters, A/D converter.
4. Learn how to design instrumentation amplifiers and filters to capture and display the EOG signals on the oscilloscope.

Project tasks:

Capture the EOG signals of the four basic eye movements (upward, downward, left, right) from a subject and display the signal on the oscilloscope.

1. Learn the characteristics of EOG signals.
2. Learn how to use Multisim/Pspice to simulate the designed instrumentation and filter circuits of EOG signal acquisition.
3. Learn to identify the components required to build an acquisition circuit.
4. Learn how to acquire EOG signals from a subject/ patient.
5. Learn to classify the type of eye movements for the acquired EOG signals correctly.