

Fakulti: FAKULTI KEJURUTERAAN ELEKTRIK	
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SKEL 3742

**FAKULTI KEJURUTERAAN ELEKTRIK
UNIVERSITI TEKNOLOGI MALAYSIA
SKUDAI, JOHOR**

ECED DEPARTMENT

**Instrumentation Amplifiers & Filter: Building Blocks
for Electromyogram (EMG) Amplifiers
(Problem Pack)**

Disediakan oleh : Nama : En. Ismail Ariffin Pn. Ismawati Abd. Ghani Pn. Norhafizah Ramli Dr. Puspa Inayat Khalid Dr. Norlaili Mat Safri Tandatangan : Cop : Tarikh : 8 March 2014	Disahkan oleh : Ketua Jabatan Nama : Tandatangan : Cop : Tarikh :
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Problem Statement

You are involved in a service learning (SL) for your co-curricular activity. Your team is assigned to help old folk care centre in monitoring the level of muscle fitness of the old people. This helps the centre to do continuous monitoring on the well-being of the old people under its care.

You need to come up with a prototype design of the muscle fitness monitoring system. Your design consideration should include amplification of muscle signal, filtering of muscle signal and minimal noise interference. To complete the monitoring system, you need to use the output of the amplifier system to drive an external circuit, e.g. an LED. The output should be such that when the muscle is flexed the LED lights and stays on for the duration of the flexion. The findings should be submitted in the form of a report and demonstration to the old folk care centre committee for deliberation.