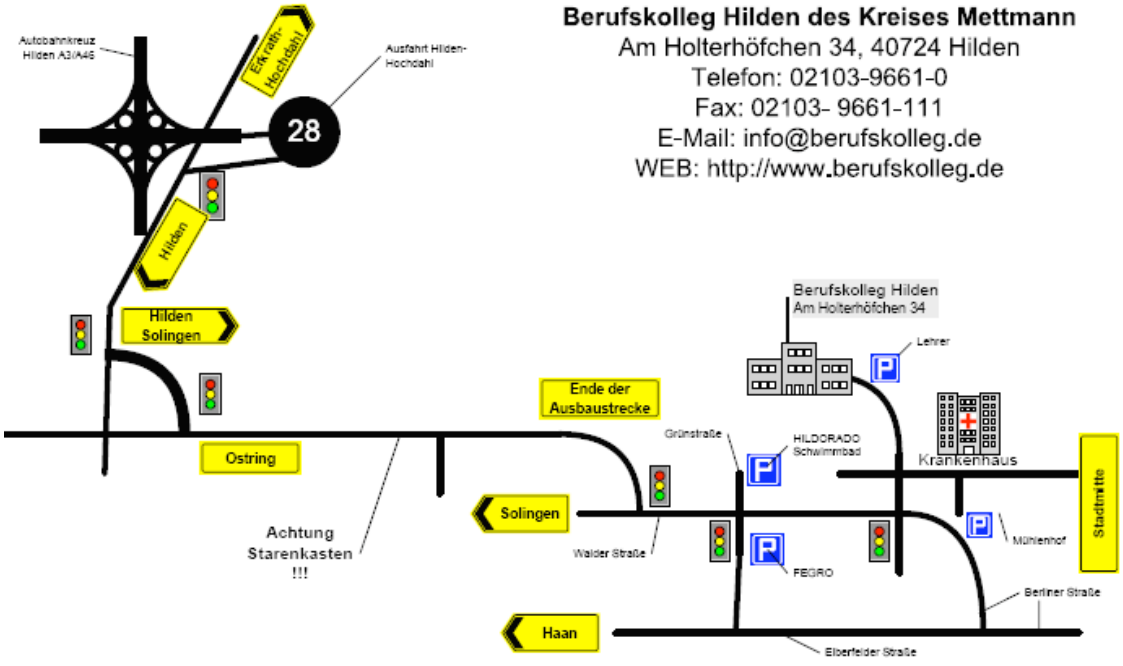
Physiology Teaching Workshop
Berufskolleg Hilden
16th, 17th November 2006

How to get there:



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Programme

Thursday, 16th November

9:30-10:00 Arrival with Tea and Coffee (Tea and Coffee will be available throughout the workshop)

10:00 Welcome to Workshop

10:05 Chart and Experiments on EMG

- *Record EMG and investigate how contractile force changes with increasing demand.*
- *Activity of antagonist muscles and the phenomenon of coactivation.*
- *Record EMG responses evoked by stimulating the median nerve at the wrist and measure the nerve conduction velocity.*

11:15 Reflexes and Reaction Times

- *Investigate reflexes and reaction times in response to a variety of stimuli and under a variety of conditions*
- *Simple and complex reflexes from a volunteer*
- *Reaction times from a volunteer given harmless visual and sound cues*
- *Time required for a planned voluntary response to a cue.*

12:30 Lunch

13:30 Chart and Labtutor Experiments on Muscle

- *Effects of electrical stimuli*
- *Record and measure muscular twitch response to nerve stimulation*
- *Recruitment in the twitch response.*
- *Using a hand dynamometer to measure the decline in maximal force during a sustained contraction*
- *Properties of muscular fatigue.*

14:45 Action potential of single nerve fibres in the earthworm

- *demonstrate some fundamental physiological properties of the nerve impulse*
- *In this experiment, it will be demonstrated how to stimulate and record extracellularly from giant axons of the earthworm.*

16:00 End of Day 1

Friday, 17th November

9:30-10:00 Arrival with Tea and Coffee (Tea and Coffee will be available throughout the workshop)

10:00 Chart and Labtutor Experiments on Respiration

- *Record a respiratory signal and analyze the recording to derive respiratory parameters*
- *Examine lung volumes and capacities*
- *Perform basic tests of pulmonary function.*

11:15 Chart and Labtutor Experiments on EOG

- *Record the electrical activity associated with eye movements*
- *Recognize common artifacts in EOG recordings and their causes*
- *Significance of angular displacement measurements*
- *Record eye movements associated with smooth tracking and investigate aspects of gaze holding.*

12:30 Lunch

13:30 Chart and Labtutor Experiments on ECG and Heart Sounds

- *Record a standard ECG and identify the major components of the ECG.*
- *Estimates of the timings of ECG components and their magnitudes.*
- *Calculate heart rate from ECG and correlate it with heart sounds.*
- *Time relationships between the electrical activity of the heart and the mechanical activity of the heart.*

14:45 Chart and Labtutor Experiments on Blood Pressure

- *Auscultation and the measurement of blood pressure using a stethoscope, blood pressure cuff and sphygmomanometer.*
- *Assess changes in peripheral circulation and the effects of cuff location*

16:00 End of Day 2