



<b>COURSE TITLE</b>	: Fundamentals and Applications of Surface Electromyography	<b>COURSE CODE</b>	: EMG
<b>COURSE DURATION</b>	: 5-day(s) / 32.00-hour(s)	<b>COURSE LEVEL</b>	: Basic
<b>COURSE CATEGORY</b>	: Competency		
<b>HRD CORP SCHEME</b>	: Claimable		
<b>COURSE FEE</b>	: RM1,590.00 (inclusive of 6% SST)		

**1. OBJECTIVE(S):**

At the end of the course, the participant will be able to:

- i. Understand the fundamentals of anatomy, physiology and biomechanics of human.
- ii. Understand basic operation of sEMG devices.
- iii. Design and select sEMG test protocols.
- iv. Apply the Electromyography knowledge in their work activities.
- v. Analyse and report sEMG results.

**2. TARGET GROUP(S):**

- i. Researchers.
- ii. Medical Doctor.
- iii. Physiotherapist.
- iv. Occupational Therapist.
- v. Sport Scientist.
- vi. Ergonomist.
- vii. Engineer.

**3. ENTRY REQUIREMENT(S):**

- i. Basic knowledge on statistic.

**4. TOPIC(S):**

- i. Functional Anatomy, Physiology, Biomechanics.
- ii. Applied Kinesiology.
- iii. Introduction to sEMG (signal and parameters).
- iv. Introduction to sEMG Devices.
- v. Subject Preparation.
- vi. Design of sEMG Experiment.
- vii. Procedures and Methodology.
- viii. sEMG Signals Acquisition and Analysis.
- ix. Interpretation of sEMG Signals.
- x. Practical Session.



xi. Written and Practical Assessment.

**5. LIST OF REFERENCE BOOK(S):**



i. sEMG Guidelines.

**6. LIST OF TEACHING AID(S):**

- i. LCD projector.
- ii. Computer.
- iii. White board with accessories.
- iv. Flip chart with accessories.
- v. DVD player & audio speaker.
- vi. EMG devices and electrodes.
- vii. EMG software.
- viii. Video camera for live broadcast.
- ix. Medical room folding curtains.
- x. Minitab software.
- xi. EMG unit & software.
- xii. Portable Plinth.

**7. LIST OF CLASSROOM ACTIVITIES:**

- i. Lecture.
- ii. Group discussion.
- iii. Case study.
- iv. Practical and assessment.
- v. Demonstration.

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	COURSE SCHEDULE		
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**COURSE TITLE: FUNDAMENTALS AND APPLICATIONS OF SURFACE ELECTROMYOGRAPHY**

**DAY ONE (EMG & ANATOMY)**

TIME	HOUR	TOPIC	TRAINER / FACILITATOR
0830 - 0900	0.50	Registration	NIOSH
0900 - 1030	1.50	Topic 1: Introduction of EMG	
1030 - 1045	0.25	MORNING TEA BREAK	
1045 - 1300	2.25	Topic 2: Applied Anatomy of Upper Body	
1300 - 1400	1.00	LUNCH	
1400 - 1530	1.50	Topic 3: Applied Anatomy of Lower Body	
1530 - 1545	0.25	AFTERNOON TEA BREAK	
1545 - 1630	0.75	Topic 4: Basic Physiology	
1630 - 1700	0.50	Assessment for Day One (Group Activities and Quiz)	
	<b>6.50</b>	<b>END OF DAY ONE</b>	

**DAY TWO (INSTRUMENTATION)**

TIME	HOUR	TOPIC	TRAINER / FACILITATOR
0900 - 1030	1.50	Topic 5: Functional Kinesiology of Upper Body	
1030 - 1045	0.25	MORNING TEA BREAK	
1045 - 1200	1.25	Topic 6: Functional Kinesiology of Lower Body	
1200 - 1300	1.00	Topic 7: Principles of EMG	
1300 - 1400	1.00	LUNCH	
1400 - 1530	1.50	Topic 8: How to use Surface EMG	
1530 - 1545	0.25	AFTERNOON TEA BREAK	
1545 - 1630	0.75	Continuation	
1630 - 1700	0.50	Assessment for Day Two (Group Activities and Quiz)	
	<b>6.50</b>	<b>END OF DAY TWO</b>	

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### DAY THREE (APPLICATION)

TIME	HOUR	TOPIC	TRAINER / FACILITATOR
0900 - 1030	1.50	Topic 9: Instrumentation of EMG	
1030 - 1045	0.25	MORNING TEA BREAK	
1045 - 1200	1.25	Topic 10: sEMG Software Navigation	
1200 - 1300	1.00	Topic 11: Mega Electronics Ltd and Measurement Solutions	
1300 - 1400	1.00	LUNCH	
1400 - 1530	1.50	Demonstration	
1530 - 1545	0.25	AFTERNOON TEA BREAK	
1545 - 1630	0.75	Demonstration	
1630 - 1700	0.50	Assessment for Day Three (Demonstration)	
	<b>6.50</b>	<b>END OF DAY THREE</b>	

### DAY FOUR (PRACTICAL DATA COLLECTION)

TIME	HOUR	TOPIC	TRAINER / FACILITATOR
0900 - 1030	1.50	Topic 12: How to design sEMG Experiment	
1030 - 1045	0.25	MORNING TEA BREAK	
1045 - 1300	2.25	Topic 13: sEMG Data analysis	
1300 - 1400	1.00	LUNCH	
1400 - 1530	1.50	Continuation	
1530 - 1545	0.25	AFTERNOON TEA BREAK	
1545 - 1630	0.75	Continuation	
1630 - 1700	0.50	Assessment for Day Four (Practical)	
	<b>6.50</b>	<b>END OF DAY FOUR</b>	

### DAY FIVE (PRACTICAL DATA ANALYSIS)

TIME	HOUR	TOPIC	TRAINER / FACILITATOR
0900 - 1030	1.50	Group Discussions	
1030 - 1045	0.25	MORNING TEA BREAK	
1045 - 1300	2.25	Continuation	
1300 - 1400	1.00	LUNCH	
1400 - 1530	1.50	Report Writing	
1530 - 1545	0.25	AFTERNOON TEA BREAK	
1545 - 1630	0.75	Assessment for Day Five (Presentation)	
1630 - 1700	0.50	Closing	NIOSH
	<b>6.00</b>	<b>END OF THE COURSE</b>	