



COURSE TITLE	: Fundamentals and Applications of Surface Electromyography		
COURSE DURATION	: 5 day(s) / 32.00 hour(s)	COURSE CODE	: EMG
COURSE CATEGORY	: Competency	COURSE LEVEL	: Basic
HRDF SCHEME	: SBL		
COURSE FEE	: RM1,590.00 (inclusive of SST)		

1. OBJECTIVES:

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. Analyze 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. Group discussion.
- ii. Case study.
- iii. Practical and assessment.
- iv. Demonstration.

	NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH			
	COURSE SCHEDULE			
	No. Dokumen	No. Pindaan	Tarikh	Muka Surat
	NIOSH-PDD-CS-EMG	00	30 Sep 2015	1 / 3


COURSE TITLE: FUNDAMENTALS AND APPLICATIONS OF SURFACE ELECTROMYOGRAPHY

DAY ONE (EMG & ANATOMY)

TIME	HOUR	TOPICS	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)	
	6.50	END OF DAY ONE	

DAY TWO (INSTRUMENTATION)

TIME	HOUR	TOPICS	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)	
	6.50	END OF DAY TWO	



	NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH			
	COURSE SCHEDULE			
	No. Dokumen	No. Pindaan	Tarikh	Muka Surat
NIOSH-PDD-CS-EMG	00	30 Sep 2015	2 / 3	

DAY THREE (APPLICATION)

TIME	HOUR	TOPICS	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)	
	6.50	END OF DAY THREE	

DAY FOUR (PRACTICAL DATA COLLECTION)

TIME	HOUR	TOPICS	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)	
	6.50	END OF DAY FOUR	

 	NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH			
	COURSE SCHEDULE			
	No. Dokumen	No. Pindaan	Tarikh	Muka Surat
NIOSH-PDD-CS-EMG	00	30 Sep 2015	3 / 3	

DAY FIVE (PRACTICAL DATA ANALYSIS)

TIME	HOOR	TOPICS	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
	6.00	END OF THE COURSE	

Last updated on 30th September 2015 by PDD