

From

Chennai

The Head

10-10-2019

Dept. of Biomedical Engineering

BIHER

To

The Dean

BIHER

Respected Sir

Sub: approval to start a value added course on “Neuroscience Of Human Movements” -reg

It has been planned by the Dept. of Biomedical Engineering to start a Value Added Course on “Neuroscience Of Human Movements” for the B-Tech Biomedical Engineering, Industrial Biotechnology and Genetic Engineering students from 30th October, 2019. The duration of the course is 30 hrs comprising of theory. I request you to kindly approve of the same.

Thanking you

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Anand', is written in a cursive style.



BHARATH INSTITUTE OF HIGHER EDUCATION AND RESEARCH

Date: 11-10-2019

SCHOOL OF BIOENGINEERING

CIRCULAR

Notification for Value added courses offered by the School of Bioengineering

The Department of Bio Medical Engineering, School of Bioengineering, is scheduled to offer a Value added Course on **NEUROSCIENCE OF HUMAN MOVEMENTS** from 30/10/2019 for a period of 3 weeks. Interested students can approach Dr.F.Emerson Solomon, Professor and Course Coordinator, Department of Bio Medical Engineering for registration and for further details on or before 27th October 2019.

Eligibility-II, III and IV B-Tech IBT, GE and BME

Course Coordinator

HOD

Copy to:

Vice Chancellor

Pro Vice Chancellor

Additional Registrar

Deans

CoE

Heads of Departments

BHARATH INSTITUTE OF HIGHER EDUCATION AND RESEARCH
SCHOOL OF BIO-ENGINEERING
DEPARTMENT OF BIO MEDICAL ENGINEERING
VALUE ADDED COURSE ON NEUROSCIENCE OF HUMAN MOVEMENTS
2019-2020
COURSE CO-ORDINATOR DETAILS

Faculty Name: Dr.Emerson Solomon F,

Professor,

Department of Bio Medical Engineering.

Email ID: emerson.bme@bharathuniv.ac.in

Mobile number: 95660 70703.

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SCHOOL OF BIO-ENGINEERING
DEPARTMENT OF BIO MEDICAL ENGINEERING
VALUE ADDED COURSE SYLLABUS
2019-2020

	Neuromechanics of Human	L	T	P	C
Value added	Total Contact Hours – 30	3	0	0	3
course code	Prerequisite – Human Anatomy and Physiology				
OBJECTIVES					
<ol style="list-style-type: none"> 1 To introduce the neural system responsible for generation of human movements. 2 To introduce neural control of movements (principles and theories) 3 Briefly introduce topics of motor disorders and rehabilitation approaches. 					

MODULE 1 Features of movement production system 6

Muscles, Neurons, Neuronal pathways, Sensory receptors, Reflexes and its kinds, Spinal control mechanisms

MODULE 2 Major brain structures responsible for movement generation 6

Motor Cortex (including a discussion of premotor and supplementary motor areas), Basal Ganglia, Cerebellum, Descending and ascending pathways

MODULE 3 Control theory approaches to motor control 6

Force control, generalized motor programs, muscle activation control, Merton's servo hypothesis, optimal control (including Posture based movement control)

MODULE 4 Coordination of human movement 6

Approaches to studying coordination: Optimization, Dynamical systems approach, Synergies, Action-Perception interactions and coupling.

MODULE 5 Changing and Evolving behaviors 6

Changes to movement control due to fatigue and aging- Spinal cord injury and Spasticity, Cortical disorders (Examples: Stroke, Cerebral Palsy), Disorders of Basal Ganglia (Examples: Parkinson's disease, Huntington's disease), Cerebellar disorders (Ataxia, Tremor, Timing issues,

problems with error correction). Approaches to rehabilitation (Example: Deep Brain Stimulation in Parkinson's patients)

Total Contact Hours: 30

Text Book:

1. Neurophysiological basis of movement (2 ed), Mark Latash, Human Kinetics, 2008
2. Fundamentals of Motor control Mark Latash, Academic Press (Elsevier) (2012)

Reference Books:

1. Progress in Motor Control: A Multidisciplinary Perspective (Advances in Experimental Medicine and Biology) (No. 5), Dagmar Sternad (ed), Springer (2007)
2. Neuroscience (5 ed), Dale Purves et al, Sinauer Associates (2011)
3. Human Motor Control (2 ed), David Rosenbaum, Academic Press (Elsevier) (2009)
4. Principles of neural science (5 ed), Eric Kandel, James Schwartz et al (2012)

SCHOOL OF BIO-ENGINEERING
DEPARTMENT OF BIO MEDICAL ENGINEERING
VALUE ADDED COURSE
COURSE ON NEUROSCIENCE OF HUMAN (2019-2020)

Session	Topic	Date	Duration (Hr)	Resource person
Session I	FEATURES OF MOVEMENT PRODUCTION SYSTEM	30.10.2019	3	Dr.F.Emerson Solomon
Session II	FEATURES OF MOVEMENT PRODUCTION SYSTEM	31.10.2017	4	Dr.R.Vasukidevi
Session III	MAJOR BRAIN STRUCTURES RESPONSIBLE FOR MOVEMENT	31.10.2017	3	Ms.S.Geetha
Session IV	MAJOR BRAIN STRUCTURES RESPONSIBLE FOR MOVEMENT	6.11.2019	3	Mr.S.Prasath
Session V	CONTROL THEORY APPROACHES TO MOTOR CONTROL	7.11.2019	4	Dr.F.Emerson Solomon
Session VI	COORDINATION OF HUMAN MOVEMENT	7.11.2019	3	Dr.R.Vasukidevi
Session VII	COORDINATION OF HUMAN MOVEMENT	13.11.2019	3	Ms.S.Geetha
Session VIII	CHANGING AND EVOLVING BEHAVIORS	14.11.2019	3	Mr.S.Prasath
Session IX	CHANGING AND EVOLVING BEHAVIORS	14.11.2019	4	Ms.S.Geetha

BHARATH INSTITUTE OF HIGHER EDUCATION AND RESEARCH

SCHOOL OF BIO-ENGINEERING

DEPARTMENT OF BIO MEDICAL ENGINEERING

VALUE ADDED COURSE TIMETABLE

2019-2020

Days / Period	I 9.00 – 9.50	II 9.50 – 10.40	III 10.50 – 11.40	IV 11.40 – 12.30	12.30 – 1.30	V 1.30 – 2.10	VI 2.10 – 2.50	VII 2.50 – 3.30
MON					LUNCH BREAK			
TUE								
WED						NMH		
THU	NMH					NMH		
FRI								
SAT								

SUBJECT CODE	SUBJECT NAME	STAFF
Theory		
Value added course	Neuroscience Of Human Movements (NMH)	Dr.Emerson Solomon F
	Room No	SK504

**BHARATH INSTITUTE OF HIGHER EDUCATION AND RESEARCH
SCHOOL OF BIO-ENGINEERING
DEPARTMENT OF BIO MEDICAL ENGINEERING
VALUE ADDED COURSE
COURSE ON NEUROSCIENCE OF HUMAN MOVEMENTS (2019-2020)**

Students Name List

S.NO	REG.NO	NAME	SEM/ YEAR	DEPART MENT
1.	U17BM002	Keerthana N	V/III	BME
2.	U17BM003	Raabiya Shareef A	V/III	BME
3.	U17BM004	Karthika S	V/III	BME
4.	U17BM005	Suprava Paul	V/III	BME
5.	U17BM006	Kartic S	V/III	BME
6.	U17BM008	Sorakayapeta R Manjusri	V/III	BME
7.	U17BM009	Jeevaraj S	V/III	BME
8.	U17BM010	B Karthikeyan	V/III	BME
9.	U17BM011	V Varatharajan	V/III	BME
10.	U17BM012	Vinodhini S	V/III	BME
11.	U17BM013	Naveen Kumar M	V/III	BME
12.	U17BM014	Dinesh Kumar R	V/III	BME
13.	U17BM015	Mathankumar G K	V/III	BME
14.	U17BM016	Ignatius Arun Sinjin G	V/III	BME
15.	U17BM017	Debabrata Bandyopadhyay	V/III	BME
16.	U17BM058	Rajalaxmi Mallick	V/III	BME
17.	U17BM059	Shaik Afnan Ali	V/III	BME
18.	U17BM060	Rajulapati Bhargavi	V/III	BME
19.	U17BM061	Duddela Bharathi	V/III	BME

20.	U17BM062	Rayala Pavan	V/III	BME
21.	U17BM064	Jerin Judery D S	V/III	BME
22.	U17BM065	Ambati Anitha	V/III	BME
23.	U17BM066	NARMADHA E S	V/III	BME
24.	U17BM067	VINCY SHAMLEY EBEN V	V/III	BME
25.	U17BM068	THEVAR KALAYARASI SENTH	V/III	BME
26.	U17BM069	ASHOK S	V/III	BME
27.	U17BM070	CHINTHAPANTI PRANEETHA	V/III	BME
28.	U17BT004	JEEVITHA S	V/III	IBT
29.	U17BT005	PALOJU DHARANI	V/III	IBT
30.	U17BT006	K KARAN	V/III	IBT
31	U17BT007	NIVEDHITHA T	V/III	IBT
32	U17BT009	JOTHI ILAVARASAN	V/III	IBT
33	U17BT010	AISHWARYA R	V/III	IBT
34	U17BT012	NAGAREDDY PRANEETH RED	V/III	IBT
35	U17BT013	MUTHYALA RAMYA	V/III	IBT
36	U17BT015	TOTTARAMUDI JABILI	V/III	BI
37	U17BR004	PREETHI P	V/III	BI
38	U17BR005	PRIYADARSHENEE R	V/III	BI
39	U17BR006	SONIYA M	V/III	BI
40	U17BR007	JARIS J	V/III	BI

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SCHOOL OF BIO-ENGINEERING
DEPARTMENT OF BIO MEDICAL ENGINEERING
VALUE ADDED COURSE
COURSE ON NEUROSCIENCE OF HUMAN MOVEMENTS (2019-2020)

Students Name List

S.NO	REG.NO	NAME	RESULT ANALYSIS
1.	U17BM002	Keerthana N	A
2.	U17BM003	Raabiya Shareef A	A
3.	U17BM004	Karthika S	S
4.	U17BM005	Suprava Paul	A
5.	U17BM006	Kartic S	S
6.	U17BM008	Sorakayapeta R Manjusri	S
7.	U17BM009	Jeevaraj S	A
8.	U17BM010	B Karthikeyan	S
9.	U17BM011	V Varatharajan	S
10.	U17BM012	Vinodhini S	S
11.	U17BM013	Naveen Kumar M	S
12.	U17BM014	Dinesh Kumar R	S
13.	U17BM015	Mathankumar G K	A
14.	U17BM016	Ignatius Arun Sinjin G	S
15.	U17BM017	Debabrata Bandyopadhyay	A
16.	U17BM058	Rajalaxmi Mallick	A
17.	U17BM059	Shaik Afnan Ali	S
18.	U17BM060	Rajulapati Bhargavi	A
19.	U17BM061	Duddela Bharathi	S

20.	U17BM062	Rayala Pavan	S
21.	U17BM064	Jerin Judery D S	A
22.	U17BM065	Ambati Anitha	S
23.	U17BM066	NARMADHA E S	A
24.	U17BM067	VINCY SHAMLEY EBEN V	S
25.	U17BM068	THEVAR KALAYARASI SENTH	A
26.	U17BM069	ASHOK S	S
27.	U17BM070	CHINTHAPANTI PRANEETHA	A
28.	U17BT004	JEEVITHA S	S
29.	U17BT005	PALOJU DHARANI	S
30.	U17BT006	K KARAN	S
31	U17BT007	NIVEDHITHA T	S
32	U17BT009	JOTHI ILAVARASAN	S
33	U17BT010	AISHWARYA R	S
34	U17BT012	NAGAREDDY PRANEETH REDDY	S
35	U17BT013	MUTHYALA RAMYA	S
36	U17BT015	TOTTARAMUDI JABILI	S
37	U17BR004	PREETHI P	S
38	U17BR005	PRIYADARSHENEE R	A
39	U17BR006	SONIYA M	A
40	U17BR007	JARIS J	A

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Students Name List

S.NO	REG.NO	NAME	RESULT ANALYSIS
1.	U17BM002	Keerthana N	4.5
2.	U17BM003	Raabiya Shareef A	4.8
3.	U17BM004	Karthika S	4.3
4.	U17BM005	Suprava Paul	4
5.	U17BM006	Kartic S	4.2
6.	U17BM008	Sorakayapeta R Manjusri	4.5
7.	U17BM009	Jeevaraj S	4.6
8.	U17BM010	B Karthikeyan	4.8
9.	U17BM011	V Varatharajan	4.9
10.	U17BM012	Vinodhini S	4.3
11.	U17BM013	Naveen Kumar M	4.2
12.	U17BM014	Dinesh Kumar R	4.5
13.	U17BM015	Mathankumar G K	4.1
14.	U17BM016	Ignatius Arun Sinjin G	4.9
15.	U17BM017	Debabrata Bandyopadhyay	4.8
16.	U17BM058	Rajalaxmi Mallick	4.7
17.	U17BM059	Shaik Afnan Ali	4.6
18.	U17BM060	Rajulapati Bhargavi	4.5
19.	U17BM061	Duddela Bharathi	4.6

20.	U17BM062	Rayala Pavan	4.5
21.	U17BM064	Jerin Judery D S	4
22.	U17BM065	Ambati Anitha	4.1
23.	U17BM066	NARMADHA E S	4.2
24.	U17BM067	VINCY SHAMLEY EBEN V	4.3
25.	U17BM068	THEVAR KALAYARASI SENTH	4
26.	U17BM069	ASHOK S	4.1
27.	U17BM070	CHINTHAPANTI PRANEETHA	4.3
28.	U17BT004	JEEVITHA S	4.2
29.	U17BT005	PALOJU DHARANI	4.1
30.	U17BT006	K KARAN	4.8
31.	U17BT007	NIVEDHITHA T	4.6
32.	U17BT009	JOTHI ILAVARASAN	4.6
33.	U17BT010	AISHWARYA R	4.5
34.	U17BT012	NAGAREDDY PRANEETH REDDY	4
35.	U17BT013	MUTHYALA RAMYA	4.5
36.	U17BT015	TOTTARAMUDI JABILI	4.2
37.	U17BR004	PREETHI P	4.3
38.	U17BR005	PRIYADARSHENEE R	4.6
39.	U17BR006	SONIYA M	4.3
40.	U17BR007	JARIS J	4.2

Value Added Course On Neuroscience Of Human Movements – 7.11.2019





Bharath

INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Declared as DEEMED-TO-BE-UNIVERSITY u/s 3 of the UGC Act, 1956)



SCHOOL OF BIOENGINEERING

VALUE ADDED COURSE ON NEUROSCIENCE OF HUMAN MOVEMENTS

Certificate

This is to certify that Mr /Ms **Keerthana N** has attended three weeks value added course on **NEUROSCIENCE OF HUMAN MOVEMENTS** conducted by Department of Biomedical Engineering at Bharath Institute of Higher Education and Research, Chennai (TN), India during 30th October-14th November , 2019.


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DEAN