From

The Head

Department of Biomedical Engineering

BIHER

Chennai

12-09-2018

To

The Dean

BIHER

Respected Sir

Sub: requesting Approval to start a value added course on "Introduction to Bioinformatics" -reg

It has been planned by the Department of Biomedical Engineering to start a Value Added Course on "Introduction to Bioinformatics" for the Students of the B.Tech - Genetic Engineering, Industrial Biotechnology, and Biomedical Engineering from 25th Sep 2018. The duration of the course is 30 hrs .Hence I request your Kind approval to conduct the Value added course.

Thanking you

12/9/18

Yours sincerely

Bharath
INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Declared as Deemed - to - be - University under section 3 of UGC Act 1956)

BHARATH INSTITUTE OF HIGHER EDUCATION AND RESEARCH

Date: 15-09-2018

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 **INTRODUCTION TO BIO INFORMATICS** from 10/10/2018 for a period of 3 weeks. Interested students can approach Emerson Solomon F., Professor and Course Coordinator, Department of Bio Medical Engineering for registration and for further details on or before 08th October 2018.

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 INTRODUCTION TO BIO INFORMATICS

2018-2019

COURSE CO-ORDINATOR DETAILS

Faculty Name: Emerson Solomon F,

Professor,

Department of Bio Medical Engineering.

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

Mobile number: 9566070703

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SCHOOL OF BIO-ENGINEERING

DEPARTMENT OF BIO MEDICAL ENGINEERING

VALUE ADDED COURSE TIMETABLE

2018-2019

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						IBI		
THU						IBI		
FRI	IBI							
SAT								

SUBJECT CODE	SUBJECT NAME	STAFF
Theory		
Value added course	Introduction To Bio Informatics (IBI)	Dr.Emerson Solomon F
	Room No	SK505

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SCHOOL OF BIO-ENGINEERING

DEPARTMENT OF BIO MEDICAL ENGINEERING

VALUE ADDED COURSE SYLLABUS

2018-2019

		L	T	P	C
Value added course code	**COURSE ON INTRODUCTION TO BIO INFORMATICS**				
	Total Contact Hours - 30	**3**	**0**	**0**	**3**
	Prerequisite – Cell Biology, Principles of Genetics, MicroBiology				

OBJECTIVES

1 To understand Basic Bioinformatics

2 To know about Structural databases of Proteins.

3 To Apply Computer aided tools for data reterival.

UNIT I: INTRODUCTION TO BIOINFORMATICS 6

Biology is an information science, History of Bioinformatics, Types of data, Application areas: Introduction to upcoming segments, NCBI & EBI resources for the molecular domain of bioinformatics, Focus on GenBank, UniProt, Entrez and Gene Ontology.

UNIT II: SEQUENCE ALIGNMENT 6

DNA and Protein Database Searching, Protein structure comparisons, PSI-BLAST, Structural genomics.

UNIT III : DATA STORAGE AND RETRIEVAL AND INTEROPERABILITY 6

Flat files, relational, object oriented databases and controlled vocabularies. File Format (Genbank, DDBJ, FASTA, PDB, SwissProt). Introduction to Metadata and search; Indices, Boolean, Fuzzy, Neighboringsearch.The challenges of data exchange and integration.

MODULE IV : GENES AND DISEASES 6

Human examples, 23&Me, Patients Like Me, SNP arrays and beyond, Genomics and human health, The promise and potential of shifting medicine from a reactive practice of treating symptoms and diseases, to one where disease risk is diagnosed early or even managed prior to onset.

MODULE V : THE FUTURE OF BIOINFORMATICS 6

Applications of bioinformatics to translational medicine and the social impacts and ethical implications of how genomic sequence information is used in society

Total Contact Hours: 30

TEXT BOOKS

1. Introduction to BioInformatics – Arthur.M.Lesk
2. Bio Informatics – A Practical Guide to Analysis of Genes and Proteins 3rd Edition –Andreas D Baxevanis, B.Francis Quellette

REFERENCE BOOKS

1. Bio Informatics Principles and Applications – Zhumur Ghosh
2. Bio Informatics Computing – Bryanbergeron.M.D

SCHOOL OF BIO-ENGINEERING

DEPARTMENT OF BIO MEDICAL ENGINEERING

VALUE ADDED COURSE

COURSE ON INTRODUCTION TO BIO INFORMATICS (2018-2019)

Session	Topic	Date	Duration (Hr)	Resource person
Session I	INTRODUCTION TO BIOINFORMATICS	10.10.2018	3	Mrs.Geetha S
Session II	INTRODUCTION TO BIOINFORMATICS	11.10.2018	3	Dr.R.Vasukidevi
Session III	SEQUENCE ALIGNMENT	12.10.2018	4	Dr.F.Emerson Solomon
Session IV	SEQUENCE ALIGNMENT	17.10.2018	3	Mr.S.Prasath
Session V	DATA STORAGE AND RETRIEVAL AND INTEROPERABILITY	18.10.2018	3	Dr.F.Emerson Solomon
Session VI	DATA STORAGE AND RETRIEVAL AND INTEROPERABILITY	19.10.2018	4	Dr.R.Vasukidevi
Session VII	GENES AND DISEASES	24.10.2018	3	Dr.F.Emerson Solomon
Session VIII	GENES AND DISEASES	25.10.2018	3	Mr.S.Prasath
Session IX	THE FUTURE OF BIOINFORMATICS	26.10.2018	4	Ms.S.Geetha

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DEPARTMENT OF BIO MEDICAL ENGINEERING

VALUE ADDED COURSE

COURSE ON INTRODUCTION TO BIO INFORMATICS (2018-2019)

ChapName	Name	Sno
Topic	**Sub Topic**	**Duration**
UNIT I: INTRODUCTION TO BIOINFORMATICS	Biology is an information science	1 hour
UNIT I: INTRODUCTION TO BIOINFORMATICS	History of Bioinformatics	1 hour
UNIT I: INTRODUCTION TO BIOINFORMATICS	Types of data	1 hour
UNIT I: INTRODUCTION TO BIOINFORMATICS	Application areas: Introduction to upcoming segments	1 hour
UNIT I: INTRODUCTION TO BIOINFORMATICS	NCBI & EBI resources for the molecular domain of bioinformatics	1 hour
UNIT I: INTRODUCTION TO BIOINFORMATICS	Focus on GenBank, UniProt, Entrez and Gene Ontology	1 hour
UNIT II: SEQUENCE ALIGNMENT	DNA and Protein Database Searching	1 hour
UNIT II: SEQUENCE ALIGNMENT	DNA and Protein Database Searching	1 hour
UNIT II: SEQUENCE ALIGNMENT	Protein structure comparisons	1 hour
UNIT II: SEQUENCE ALIGNMENT	Protein structure comparisons	1 hour
UNIT II: SEQUENCE ALIGNMENT	PSI-BLAST	1 hour
UNIT II: SEQUENCE ALIGNMENT	Structural genomics	1 hour
UNIT III: DATA STORAGE AND RETRIEVAL AND INTEROPERABILITY	Flat files, relational, object oriented databases and controlled vocabularies	1 hour
UNIT III: DATA STORAGE AND RETRIEVAL AND INTEROPERABILITY	File Format (Genbank, DDBJ, FASTA, PDB, SwissProt	1 hour
UNIT III: DATA STORAGE AND RETRIEVAL AND INTEROPERABILITY	Introduction to Metadata and search; Indices, Boolean, Fuzzy, Neighboringsearch	1 hour
UNIT III: DATA STORAGE AND RETRIEVAL AND INTEROPERABILITY	Introduction to Metadata and search; Indices, Boolean, Fuzzy, Neighboringsearch	1 hour
UNIT III: DATA STORAGE AND RETRIEVAL AND INTEROPERABILITY	The challenges of data exchange and integration	1 hour
UNIT III: DATA STORAGE AND RETRIEVAL AND INTEROPERABILITY	Ontologies, interchange languages and standardization efforts	1 hour
UNIT IV: GENES AND DISEASES	Human examples, 23&Me, PatientsLikeMe	1 hour
UNIT IV: GENES AND DISEASES	SNP arrays and beyond	1 hour
UNIT IV: GENES AND DISEASES	Genomics and human health	1 hour
UNIT IV: GENES AND DISEASES	Genomics and human health	1 hour
UNIT IV: GENES AND DISEASES	The promise and potential of shifting medicine from a reactive practice of treating symptoms and diseases	1 hour
UNIT IV: GENES AND DISEASES	The promise and potential of shifting medicine from a reactive practice of treating symptoms and diseases	1 hour
UNIT V:THE FUTURE OF BIOINFORMATICS	Applications of bioinformatics to translational medicine	1 hour
UNIT V:THE FUTURE OF BIOINFORMATICS	Applications of bioinformatics to translational medicine	1 hour
UNIT V:THE FUTURE OF BIOINFORMATICS	the social impacts and ethical implications	1 hour
UNIT V:THE FUTURE OF BIOINFORMATICS	the social impacts and ethical implications	1 hour
UNIT V:THE FUTURE OF BIOINFORMATICS	genomic sequence information is used in society	1 hour
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DEPARTMENT OF BIO MEDICAL ENGINEERING

VALUE ADDED COURSE

COURSE ON INTRODUCTION TO BIO INFORMATICS (2018-2019)

Students Name List

S.NO	REG.NO	NAME	SEM/ YEAR	DEPARTMENT
1.	U16BM003	Evangeline elakiya benedict E.D	V/III	BME
2.	U16BM004	Vinothraj.K	V/III	BME
3.	U16BM005	Paul harrison .J	V/III	BME
4.	U16BM006	Siva harish	V/III	BME
5.	U16BM008	Monisha.R	V/III	BME
6.	U16BM010	Subburam K.M	V/III	BME
7.	U16BM011	Pavithra.V	V/III	BME
8.	U16BM012	Ashini I.S	V/III	BME
9.	U16BM013	P.V.Jhansi kiran	V/III	BME
10.	U16BM014	Jayapreetha.M	V/III	BME
11.	U16BM015	Jeya barathi.S	V/III	BME
12.	U16BM016	Ajmeera aruna	V/III	BME
13.	U16BM017	Bysani anjani umeshi	V/III	BME
14.	U16BM018	Ajith kumar.P	V/III	BME
15.	U16BM021	Chryolyte precious rani.S	V/III	BME
16.	U16BT003	Sankar Singh.T	V/III	IBT
17.	U16BT004	Balaji	V/III	IBT
18.	U16BT005	Kadar Jassim MMS	V/III	IBT
19.	U16BT007	Vishal	V/III	IBT

20.	U16BT008	Bharath AK	V/III	IBT
21.	U16BT009	Karamy Aiphaba	V/III	IBT
22.	U16BT010	Poovarasan A	V/III	IBT
23.	U16BT012	Pinky Maibam	V/III	IBT
24.	U16BR022	UPAL JOSHI	V/III	BI
25.	U16BR023	VINODH KANNA K	V/III	BI
26.	U16BR025	HARINI B	V/III	BI
27.	U16BR026	RAMESH T	V/III	BI
28.	U16BR027	MUGUNDAN K	V/III	BI
29.	U16BR028	VISHNU S	V/III	BI
30.	U16BR029	KAMARAPU AMULYA	V/III	BI

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Students Name List

S.NO	REG.NO	NAME	RESULT ANALYSIS
1.	U16BM003	Evangeline elakiya benedict E.D	A
2.	U16BM004	Vinothraj.K	S
3.	U16BM005	Paul harrison .J	S
4.	U16BM006	Siva harish	A
5.	U16BM008	Monisha.R	S
6.	U16BM010	Subburam K.M	S
7.	U16BM011	Pavithra.V	A
8.	U16BM012	Ashini I.S	A
9.	U16BM013	P.V.Jhansi kiran	S
10.	U16BM014	Jayapreetha.M	S
11.	U16BM015	Jeya barathi.S	A
12.	U16BM016	Ajmeera aruna	A
13.	U16BM017	Bysani anjani umeshi	A
14.	U16BM018	Ajith kumar.P	
15.	U16BM021	Chryolyte precious rani.S	S
16.	U16BT003	Sankar Singh.T	S
17.	U16BT004	Balaji	S
18.	U16BT005	Kadar Jassim MMS	S
19.	U16BT007	Vishal	

			S
20.	U16BT008	Bharath AK	A
21.	U16BT009	Karamy Aiphaba	A
22.	U16BT010	Poovarasan A	A
23.	U16BT012	Pinky Maibam	A
24.	U16BR022	UPAL JOSHI	A
25.	U16BR023	VINODH KANNA K	B
26.	U16BR025	HARINI B	A
27.	U16BR026	RAMESH T	B
28.	U16BR027	MUGUNDAN K	A
29.	U16BR028	VISHNU S	A
30.	U16BR029	KAMARAPU AMULYA	S

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A GRADE NAAC NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

BHARATH INSTITUTE OF SCIENCE AND TECHNOLOGY
SCHOOL OF BIO-ENGINEERING
VALUE ADDED COURSE ON INTRODUCATION OF BIO INFORMATICS
CERTIFICATE

This is to certify that Mr./Ms. **Pavithra.V** has attended three weeks Value Added Course on INTRODUCTION ON BIO INFORMATICS conducted by Department of Biomedical Engineering at Bharath Institute of Higher Education and Research, Chennai (TN), India during 10th October -26th October, 2018.

COORDINATOR

HOD

Course Feedback Form

Course Title: Introduction of Bio-Informatics
Dates: 26-10-18 Venue: BME

Please fill the short questionnaire to make the course better.

Your background: Teaching in Engg./Arch./Diploma ✓ Research Organisation Industry

Your Highest Qualifications: Diploma/ Degree/ ME/ MTech/ PhD

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

THE DESIGN OF THE COURSE

A. Were objectives of the course clear to you? Y ☑ / N ☐

B. The course contents met with your expectations
1. Strongly disagree 5. Strongly agree [5]

C. The lecture sequence was well planned
1. Strongly disagree 5. Strongly agree [5]

D. The contents were illustrated with
1. Too few examples 5. Adequate examples [5]

E. The level of the course was
1. Too low 5. Too high [5]

F. The course contents compared with your expectations
1. Too theoretical 5. Too empirical [5]

G. The course exposed you to new knowledge and practices
1. Strongly disagree 5. Strongly agree [5]

H. Will you recommend this course to your colleagues?
1. Not at all 5. Very strongly [5]

THE CONDUCT OF THE COURSE

A. The lectures were clear and easy to understand
1. Strongly disagree 5. Strongly agree [5]

B. The teaching aids were effectively used
1. Strongly disagree 5. Strongly agree [5]

C. The course material handed out was adequate
1. Strongly disagree 5. Strongly agree [5]

D. The instructors encouraged interaction and were helpful
1. Strongly disagree 5. Strongly agree [5]

E. Were objectives of the course realized? Y ☑ / N ☐

F. Please give overall rating of the course

90% - 100%	( )	60% - 70%	( )
80% - 90%	(✓)	50% - 60%	( )
70% - 80%	( )	below 50%	( )

Optional – Your name and contact address: Pavithra V.

Thank you!!

Course Feedback Form

Course Title: Introduction of Bio-Informatics
Dates: 26-10-18 Venue: BME

Please fill the short questionnaire to make the course better.

Your background: Teaching in Engg./Arch./Diploma Research Organisation Industry

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90% - 100%	(✓)	60% - 70%	( )
80% - 90%	( )	50% - 60%	( )
70% - 80%	( )	below 50%	( )

Optional – Your name and contact address: Virothraj K.

Thank you!!