DEPARTMENT OF BIOTECHNOLOGY
Ministry of Science & Technology

AQUACULTURE AND MARINE BIOTECHNOLOGY PROGRAMME, DBT http://dbtmarineprog.gov.in

ANNOUNCING THE FIRST DBT SPONSORED TRAINING PROGRAM IN

SYNTHETIC BIOLOGY

JOINTLY ORGANIZED BY

Prof. Pawan K. Dhar, School of Biotechnology, Jawaharlal Nehru University, New Delhi

Prof. I.S. Bright Singh, National Centre for Aquatic Animal Health, Cochin University of Science and Technology, Cochin, Kerala

Dr. Joseph Selvin, Department of Microbiology, Pondicherry University, Puducherry

DURATION: S I X M O N T H S

BATCH 1: Jun 01, 2018 – Nov 30, 2018

JNU	Fri, Jun 1, 2018 - Fri, Aug 10, 2018	[71 days]
CUSAT	Mon, Aug 13, 2018 – Fri, Sep 28, 2018	[47 days]
PU	Mon, Oct 1, 2018 – Fri, Nov 16, 2018	[47 days]
JNU	Mon, Nov 19, 2018 – Fri, Nov 30, 2018	[12 days]

BATCH 2: Dec 01 – May 31, 2019

JNU	Sat, Dec 1, 2018 - Fri, Feb 8, 2019	[70 days]
CUSAT	Mon, Feb 11, 2019 – Fri, Mar 29, 2019	[47 days]
PU	Mon, Apr 01, 2019 – Fri, May 17, 2019	[47 days]
JNU	Mon, May 20, 2019 – Fri, May 31, 2019	[12 days]

see http://www.syntheticbiology.in for more details

LEARNING OBJECTIVES: By completing this course, students will

- understand fundamental engineering concepts applicable to biological engineering
- recognize key research work from academia & industry towards practical applications
- receive hands on training with computational and experimental synthetic biology
- practically work on a specific example taken from marine organism
- get acquainted with ethical, biosafety and biosecurity aspects of synthetic biology

COURSE CONTENT

THEORY: Introduction to logic gates, analog and digital systems, historical perspective of synthetic biology, biobricks, MIT Registry of standard Biological parts, gene truth table, synthetic genes and proteins, repressilator, bacterial camera, toggle switch, minimal synthetic cell, synthesizing genome, bioCAD platforms, iGEM, ethics, safety, industrial applications

EXPERIMENTAL: computational biocircuit design, cell culture, promoter design, vector construction, cloning, expression measurement, biobrick / non-biobricks datasheet, synthetic genes and proteins Techniques of whole transcriptome library production and de novo assembly, quantitative real-time PCR techniques in analysis of gene-expression pattern, generation of regulatory network models using transcriptome data and gene expression pattern analysis *(pyocyanin synthesis pathway of Psuedomonas aeruginosa will be used as the model).*

WHO CAN APPLY: M.Sc., M.Tech, Ph.D., Post Doc, Young Investigators

NUMBER OF SEATS: 7 *(for June 2018 batch)* and **8** *(for Dec 2018 batch)*

HOW TO APPLY: Fill up the form and e-mail it to

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Jawaharlal Nehru University, New Delhi-110067
email: synbiotraining@gmail.com, pawandhar@mail.jnu.ac.in
http://www.syntheticbiology.in

LAST DATE OF RECEIPT OF APPLICATIONS **APRIL 15, 2018**
THE DECISION WILL BE CONVEYED BY **APRIL 25, 2018**

NOTE: NO SCHOLARSHIPS ARE PROVIDED WITH THIS PROGRAM